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THE EMBRYOHORMONIC RELATIONS OF THE ENDOCRINE GLANDS

I. THE EMBRYOHORMONIC RELATIONS OF THE THYROID GLAND TO ECTODERMAL TISSUES

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This series of articles will deal with the embryohormonic relations of the endocrine glands. By embryohormonic control is meant the capacity of particular endocrine organs to regulate certain tissues according to their embryological origin.

The present article will discuss the embryohormonic relations of the thyroid gland to ectodermal tissues.

It is interesting to note the rapid progress made in the study of the thyroid gland function. Some years ago a diagnosis of hypothyroidism required the presence of all the cardinal signs and symptoms, which is in contrast to our present-day diagnosis. The

same is true of hyperthyroidism. This progress is due to our increasing knowledge of glandular physiology.

There are certain reasons why a disturbed function of the same gland will reveal itself with varying symptoms in two individuals.

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Of prime importance is the factor of constitutional inheritance. The individual inherits to a certain degree his glandular activity. His inheritance also determines the predominant and recessive characteristics of certain tissues under glandular control. The problem resolves itself into: Do the glands of internal secretion determine the constitutional inheritance? Both exogenous and endogenous influences affect glandular function. It is reasonable to suppose that a long standing exogenous or endogenous factor which exerts its influence over many generations will produce bodily changes or mutations of form and function. Darwin's studies on the origin of man assume greater significance in the light of our newer endocrine knowledge.

Another important factor showing why individuals having the same glandular disturbance present different manifestations is the quantitative difference of glandular pathology.

The almost countless combinations possible between male and female chromosomes show why certain tissues bear the brunt of the pathology in glandular disturbances.

The greatest difficulty which endocrinologists have encountered is the interglandular relationships.

It is apparent that no endocrine disease is monoglandular but always pluriglandular. The primary pathology may begin in one gland but always involves other glands secondarily.

The whole problem of interglandular relationships is made much simpler by embryology. These embryohormonic relationships provide a clear, distinct and intelligible hypothesis of endocrine interrelationships.

The chemistry of glandular interrelationships is no doubt very complicated and difficult to follow and we must look to the physiological chemists to solve these.

How intricate and complicated a process is the chemistry and how closely allied are the various endocrine functions is well illustrated by bone formation. We know that the parathyroids influence bone development through the control of calcium metabolism. The thyroid gland influences bone development as seen in hypothyroidism. We will see how this is accomplished elsewhere in the paper.

The unquestioned control which the pi-

tuinary exercises over skeletal development shows the necessary correlation of endocrine gland function.

It is evident that there must exist a very delicate and necessarily intimate correlative interglandular function forming an interlocking mosaic pattern. To determine minutely each glandular function requires a dissection of this mosaic pattern into its structural elements. This is where embryology serves a most useful purpose and provides the pivot upon which the whole problem revolves. Enthusiasm for this viewpoint is found in its increasing acceptance here and abroad. Its basic principles provide a most reasonable and logical understanding of pluriglandular involvement of endocrine diseases.

It must be realized that the many quantitative differences in glandular pathology accounts for the varying picture seen in different individuals. For example, it has been noted that certain individuals with proven (autopsied) pituitary involvement have a polycythemia, whereas others do not present this finding. Until we accept these quantitative glandular changes and constitutional tissue differences, we cannot make the necessary progress.

Today, we are able to foretell with some degree of accuracy an individual's disease predisposition. As Bauer says: "An individual disease predisposition may be constitutional, conditional or combined. The following examples illustrate this: An individual with a long, small thorax and large lungs, has a greater chance, all things being equal, of becoming ill with a progressive pulmonary tuberculosis than an individual with a broad, short thorax and small lungs in that he possesses, through the medium of his inheritance, a constitutional predisposition to pulmonary tuberculosis. An individual who has just had measles or whooping cough is, all things being equal, in more danger of contracting tuberculosis than one who has not just had this. There is, therefore, with this a conditional disposition to tuberculosis. If such an individual is narrow-chested and has an especially long lung, then he possesses a combined constitutional and conditional disposition to pulmonary tuberculosis. He is, therefore, on the basis of his constitutional type, in greater danger of contracting this disease."

It is obvious that only the basic principles

upon which this embryohormonic control is founded can be outlined here. The applications of these principles are so far reaching that they involve all fields of medicine.

It is usual to ask for experimental evidence to support an endocrine theory and rightly so. Nature has performed these experiments for us and the truth of these principles has been ascertained by postmortem verification. It must be realized that there is a vast difference in the constitutional make-up and reactions of various animals as compared with humans. Rats, for instance, do not react with a polycythemia after bilateral adrenalectomy, whereas dogs do.

I do not wish to imply that experimental work has not verified the embryological principles for, indeed, it has aided it immensely. My point is that the human being is our best experimental laboratory and furnishes us with known facts. The truth of the embryological principles is found in the pathological findings of humans.

What important and diverse actions the various glands produce will readily be seen if the embryohormonic relations of the glands are studied. It is quite impossible in these articles to take up the many sided phases of medicine which these principles are applicable to.

What a vast field of research these embryohormonic relations of the endocrine glands open up!

Without entering into any speculation, it must be evident to everyone that herein lies the most fertile field of neoplastic research. Since these embryohormonic principles were outlined in 1914, it has been gratifying to see that experimental and clinical research has added a host of data to support it.

First will be considered the embryohormonic relations of the thyroid gland to ectodermal tissues. It is to be definitely understood that the embryological origin of the endocrine gland is not the criterion for its selective action. For example, the pituitary gland is derived from the ectoderm but it does not have a selective action on ectodermal tissues. That the thyroid gland function is a most important one is evidenced by the fact that it is genetically one of the first organs to be developed in the embryo, its anlage already being present in the third week of embryos of 18 vertebræ.

The *thyroid gland*, an entodermal derivative, has a selective action on *ectodermal tissues*.

The ectodermal tissues are:

Skin (epidermis—in contrast to corium)

Hair shaft

Nails

Sebaceous and sudorific glands

Mammary glands

Enamel of teeth

Eye (with the exception of the supporting and vascular layers such as the sclera, choroid, stroma of iris, etc.)

Auditory organ proper

Central nervous system

Sympathetic nervous system

Adrenal medulla

Olfactory organ

Pituitary gland

The best proof of the thyroid gland's selective action is seen in congenital deficiency of this gland's secretion, resulting in the disease cretinism. Naturally the development of the ectodermal tissues must, if the principle be correct, show marked developmental and functional defects. Clinically and pathologically we find this to be true.

It must be realized that since the thyroid influences the development of all ectodermal structures, which includes the pituitary, it will through this latter gland also influence mesodermal structures. This makes the problem somewhat difficult for it must be realized that congenital athyreosis results in a congenital hypopituitarism with its consequent mesodermal underdevelopment. But for this very reason, we are able to understand the interlocking correlative function as expressed in tissue development. Congenital hypothyroidism or cretinism illustrates the ectodermal defects.

Skin (sebaceous and sudorific glands, nails, hair shaft, lens of eye, conjunctiva, etc.)

The peculiar appearance of the skin seen in cretinism is well known. The edematous appearance is a great aid in diagnosis. The skin is very dry and scaly. The sebaceous and sudorific gland function is very much decreased so that these individuals do not sweat and the skin has very little sebaceous secretion. The consequence of this is that we see many dermatological conditions as a result of lessened thyroid secretion. The increased resistance of the skin to electrical stimuli is also found. The chemical influence of the thyroid on skin is recognized and is well illustrated in myxedema. Delay of absorption from the skin is found in

myxedematous individuals (Eppinger). In thyroidectomized animals Luithlen found retardation of healing of the skin.

Schlagenhauser and Wagner v. Jauregg studied the skin of goats on whom thyroidectomy had been performed in the first few months of life. They found a mucin-like substance in the epidermis. In some parts there was edema. There is no question that the thyroid influences, by its secretion through chemical means, the epidermis.

Hair.—Before showing the hair involvement, it would be well to give a very brief review of hair development. This is necessary because the ectodermal and mesodermal portions are seemingly inseparably associated. It is to be noted again, however, that the thyroid affects specifically the *ectodermal* cells, not the mesodermal cells, the latter being influenced by the pituitary.

Hairs are derived from thickening of the epidermis. "The first evidence of a hair anlage is the elongation of a cluster of epidermal cells in the inner germinal layer. The bases of these cells project into the corium and above them cells of the epidermis are arranged parallel to the surface. The elongated cells continue to grow downward until a cylindrical hair anlage is produced. This consists of an outer wall, formed of a single layer of columnar cells continuous with the basal layer of the epidermis. This wall bounds a central mass of irregularly polyhedral epidermal cells. About the hair anlage the *mesenchyma* forms a sheath and at its base a condensation of mesenchyma produces the anlage of the *hair papilla* which projects into the enlarged base of the hair anlage. As development proceeds, the hair anlage grows deeper into the corium and its base enlarges to form the hair bulb. The hair differentiates from the based epidermal cells surrounding the hair papilla. These cells give rise to a central core which grows toward the surface, distinct from the peripheral cells which form the outer sheath of the hair. The central core of cells becomes the inner hair sheath and the shaft of the hair." (Prentiss and Arey's Embryology.)

Briefly stated, then, the central shaft and bulb is *ectodermal* and influenced by the state of the thyroid gland whereas the hair papilla and outer sheath are *mesenchymal* in origin and as we shall see in the next article are influenced by the pituitary gland.

We shall likewise see in this article that

the thyroid gland influences the ectodermal pituitary showing how well nature correlates the various functions and structures. The point I wish to make here is that, since the ectodermal hair shaft is influenced by the thyroid, it would seem logical to suppose that there must be a mechanism present to affect the allied nutritional part of the hair, the mesodermal hair papilla, and this is brought about by the thyroid's effect on the pituitary. It is evident then that there must be an intimate correlative function among the endocrine glands themselves.

In hypothyroidism the hair of the head may be absent and when present is dry, brittle and sparse. In severe congenital hypothyroidism, the scalp may be covered merely with lanugo. The hair of the eyebrows, shins, crines pubis and axillary hair is very sparse and not infrequently is almost absent so that the individual presents a bizarre appearance. The eyelashes are short and even absent. This type of case responds very well to thyroid extract as amply proven by many. It is evident that the thyroid does influence the development of the hair and that suffices for our present purpose. In the article on the pituitary will be shown the pituitary's influence on the mesodermal hair papilla.

Nails.—The nails in hypothyroidism are often non-developed. This is particularly true of cretinism. In myxedema, they are lustreless, brittle and striated. The nails grow very slowly in these cases and are usually very small.

Janney and Henderson state that in at least eighty per cent of hypothyroid cases the nails suffer. The first changes are increased softness and brittleness so that complaint is made of sensitiveness of the finger tips. As Janney says, in severe cases they may become paper-thin or, rarely, be shed. The lanulae may be deficient and white spaces appear on the matrix. He says, "It is surprising how little attention is paid to these straws which show how the wind is blowing."

Heller has reviewed the literature in regard to the nail changes found in endocrine disturbances and he found that the thyroid and parathyroid disturbances cause the greatest changes. Interesting is the fact that thyroidectomized sheep and goats lose their horns.

Enamel of Teeth.—It is necessary to state

that the enamel of the teeth is derived from the ectoderm, whereas the dentin and cementin are derivations of the mesoderm. The enamel of the teeth in congenital hypothyroidism is defective. It is interesting to note that congenital goiters with hypothyroidism will show very definite enamel defects. Unfortunately, dentists ascribe it to the diet, and, while the question of diet is important, nevertheless the state of the thyroid and other endocrine glands is all-important. To be sure, wrong diets through the intermediary action of the endocrine glands do influence various tissues but the importance of the glands is often lost sight of.

Thyroidectomized animals often lose the enamel of the teeth.

In the literature are many reports concerning hypothyroidism and defective enamel development.

Mammary Gland.—The mammary gland, being a modified sweat gland and ectodermal in origin, is influenced like the sudorific glands elsewhere. In congenital hypothyroidism, the lacteal tissue of the mammary gland is poorly developed. In young thyroidectomized animals, the mammary ridge fails to develop. Thyroid disturbances frequently manifest themselves in the mammary gland. This relationship between thyroid and mammary gland is well known.

In hyperthyroidism, due particularly to adenomatous goiter, adenoma of the mammary gland is not infrequently found. Ballin and I, as well as others, called attention to the simultaneous occurrence of tumors in the thyroid, uterus and breast. Mastitis is frequently seen in thyroid disturbances and the physiological swelling of the breasts and thyroid preceding and during menstruation suggests the relationship between these two glands.

Eye.—The eye with the important exception of the vascular and supporting tissues (sclera, choroid, ciliary body, stroma of iris, etc.) is ectodermal in origin. It is most important to keep the origin of the various layers in mind.

In athyreosis and hypothyroidism, affections of the ectodermal derivations are common.

Again the relationship of the thyroid to the nervous system becomes apparent in the ectodermal nervous elements of the eye. Congenital lack of thyroid secretion is often

reflected in the maldevelopment of the ectodermal tissues of the eye.

Zentmayer says that young thyroidectomized animals have maldevelopment of the uveal tract and are often totally blind.

Conjunctivitis (non-infectious type) is frequently found in hypothyroidism. Therapeutically, thyroid extract actually cures these cases. This naturally is important for ophthalmologists.

Auditory Organ.—The auditory organ proper is derived from the *ectoderm* whereas *mesenchyme* surrounds the labyrinth.

It is a well known fact that thyroid insufficiency results in various degrees of auditory underdevelopment and consequent deafness. Leicher described these auditory defects in his book on internal secretions and ear disturbances.

Scholz found that 29 per cent of cretins were deaf mutes and 32 per cent hard of hearing. Leicher says this percentage is too low. The pathological changes in the auditory organ in congenital hypothyroidism are many and diverse. Atrophic changes in the organ of Corti and ganglion cells are described. Of course much depends upon the time of life at which the hypothyroidism sets in as well as upon the degree of severity.

In 1927, I reported twenty-four cases of hypothyroidism associated with deafness and vertigo. Eighteen of these who had not gone on to total deafness were improved by thyroid extract. Barlow, Drury and others have called attention to the thyroid and hearing defects.

The reader is referred to Leicher's and also to Alexander's works, which give the pathological findings of cretinism in detail.

Central Nervous System.—The brain and nervous system in general is derived from the ectoderm. The pia mater, arachnoid, dura mater, etc., are mesodermal in origin. Here we see a very obvious and at the same time most important relationship between thyroid secretion and the central nervous system. How far reaching this fact is must be realized when the whole mental and psychic makeup of an individual is dependent upon his thyroid function. Lack of thyroid secretion, congenital in origin and of a severe degree, results in idiocy. Lesser degrees of course produce lesser degrees of mental changes.

The pathological-anatomical changes pres-

ent in the central nervous system in athyreosis and hypothyroidism are varied and diverse. Broadly stated, it may be said that congenital lack of thyroid secretion results in severe degrees of psychic changes based upon anatomical cerebral pathology. It is especially important for the growing child. The earlier hypothyroidism is recognized in infancy, the greater will be the benefits of thyroid therapy. From this, we see that feeding of thyroid extract to goiterous mother during pregnancy is of greatest benefit to the child. This is truly preventive medicine.

If hypothyroidism is recognized late in childhood, the less influence will thyroid therapy have on mental development.

As further proof of the thyroid influence on brain development are the findings of DeBiasi, who found a complete absence of the thyroid in cases of anencephalus.

If this physiological relationship between the thyroid and central nervous system was recognized oftener by psychiatrists, there would be less tendency to diagnose functional conditions. Many hyperthyroid patients, because of their emotional instability, are treated as psychoneurotics, which they are, but with definite pathological foundation.

An extended discussion of this most important relationship is not the purpose of this paper but merely to show the important physiological relationships between thyroid and the ectodermal nervous system.

Sympathetic Nervous System and Adrenal Medulla.—The relationship between the sympathetic system, adrenal medulla and thyroid is a very close one. Generally speaking, the vast amount of clinical and experimental data shows that the sympathetic system parallels the function of the thyroid.

Athyreosis is accompanied by an aplastic adrenal medulla.

That changes are also found in the adrenal cortex is well understood by the accompanying pituitary involvement found in athyreosis with its concomitant adrenal cortex hypoplasia.

Hammett found the adrenals of rats smaller after thyroparathyroidectomy.

It is well known that the hypothyroid individual has a greater tolerance for epinephrine than normal whereas in hyperthyroidism the reverse is true.

Pituitary Gland.—The relationship between the thyroid and pituitary gland is a

most important one and must be emphasized so that a clear understanding of this hormonal correlation is provided. This becomes the keynote of embryohormonic relationships and goes far towards clearing up many obscure points in endocrine correlations. The involvement of the ectodermal pituitary glands results in secondary mesodermal tissue involvement, not, however, to the extent seen in primary pituitary disease. It depends also, among other things, upon the extent of the pituitary changes. Likewise, it must be remembered that the age at which the hypothyroid function sets in is important, for if this takes place *after* puberty, when the sexual glands are active, a somewhat different reaction of the pituitary takes place.

As will be shown in other articles, the corpus luteum of the ovary and the interstitial cells of the testicle are antagonistic to the pituitary and act as a balance wheel to its function. Thus animal experiments, as well as human studies, may vary as to the size of the pituitary in hypothyroidism, depending upon the sexual development of the animal.

Again congenital hypothyroidism or athyreosis are the most useful clinical examples showing the thyroid's influence on pituitary development.

It has previously been stated that the thyroid gland is, genetically speaking, one of the first organs to be developed in the embryo, its anlage already being present in the third week of embryonic life.

Genetically, the pituitary is also developed early (3 mm.), as would be expected, since its function is to influence the mesodermal tissues.

With the foregoing facts in mind it is not surprising, therefore, that the opinions concerning the state of the pituitary in hypothyroidism are diverse. An analysis of the assembled opinions shows that some say that the pituitary is smaller after thyroidectomy and others say that it is enlarged.

Information concerning the pituitary function in hypothyroidism is best obtained from *congenital* hypothyroid conditions as well as the clinical signs and symptoms.

It has also been found that in anencephalus anomalous development of the pituitary is present. For instance, Covell, studying thirty-two cases of anencephalus, concluded that the pars nervosa was lacking in the ma-

jority of cases, the remainder of the gland showing many developmental defects.

The ectodermal neural lobe suffers as severely as the rest of the ectodermal nervous tissue in anencephalus.

With the definite knowledge that the thyroid gland influences the development of the ectodermal nervous system (brain, etc.), it is only logical to assume that the neuro ectodermal posterior lobe should be either absent, deformed or underdeveloped in congenital hypothyroidism.

Gradations of involvement of the ectodermal pituitary are, therefore, dependent upon the degree of congenital hypothyroidism and represent a hypofunction of the pituitary accompanying hypothyroidism.

Clinically, we find this to be true. Congenital hypothyroidism shows that the pituitary function is reduced. We note, for instance, that the mesodermal bones are retarded in development, likewise the sex

glands—merely to mention two outstanding signs.

Another important fact is that the size of the gland is not necessarily the criterion of its function. Severe hypothyroidism is frequently seen in conjunction with large colloid goiters.

In summary, we may say that the thyroid secretion influences the ectodermal pituitary gland.

SUMMARY

The endocrine glands are intimately linked with the constitutional development of an individual.

Embryology supplies the keynote to interglandular relationships.

The embryohormonic relations of the thyroid gland to ectodermal tissues furnishes a reasonable explanation of thyroid function.

ASCARIS LUMBRICOIDES INFESTATION IN CHILDREN IN OAKLAND COUNTY

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Ascaris lumbricoides infestation of the intestinal tract in children apparently has not been common in Michigan, as I am unable to find any reports on the subject. Weller¹ says that he very seldom sees the worm. Cowie² says that while occasionally a case is seen in the clinic, neither he nor Parsons has seen any in private practice, but recently several communications concerning ascaris have been received and one infestation of thirty-nine worms has been reported to him. Young³ states that occasionally ova of ascaris are found in stool examinations at the State laboratory.

Such infestations must be present because of the ubiquity of the parasite, which has been found infecting human hosts from Finland and Greenland to South Africa. Available tables⁴ of human infestation showed a frequency of 1.29 for New York City in 1920, and 1.96 for Chicago in 1906. I have found none for Detroit or Michigan and what the present percentage of frequency may be I do not know.

The classic signs popularly supposed to be pathognomonic of intestinal parasites in

general, and most frequently discussed by the mothers of children, are picking the nose and grinding the teeth. That these signs were also once regarded as characteristic by members of the medical profession may be verified by consulting texts of pediatrics of not more than twenty years ago. The excellent recent work of Keller⁵ et al. has shown the fallacy of the nose and teeth syndrome. They found most characteristically, disturbed sleep, abdominal discomfort, abdominal protruberance and eosinophilia in the majority of white patients, but that any or all of these symptoms and signs may be absent.

The diagnosis of ascaris infestation rests upon demonstration of the worm or its eggs

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in the feces of the patient, or of the worm in the intestinal tract of the patient, according to the X-ray method carried out by Archer and Peterson.⁶ This latter method is necessary only when no female worms are present and therefore no eggs are to be found in the stools.

A brief review of the literature on the subject of ascariasis will convince the reader that the infestation is a latent source of much pathology, aside from the distress caused simply by the presence of the worms in the intestine. Three cases are given of fatal strangulation from migration of the worms up to the digestive tract and thence to the larynx. *Ascaris* have been found in almost all of the body and organ cavities, including the mastoid and heart. The worm substance is capable of producing a general sensitivity in the human. By sheer mechanical means a mass of worms may produce intestinal obstruction or a single worm may occlude the common duct.

The possible sources of infection in Oakland County are probably less in number than in those districts in the southern states where the infestation is heavy and where the percentage frequency may be as high as 82.7 per cent⁷ for certain localities. The common source is, of course, soil polluted with feces of humans or pigs, or drainage water from such soil. Simpson⁸ suggests that the popular fad of feeding children raw vegetables, many of which are shipped from the south, may account for one source. Smithies⁹ says, "If patients definitely can be shown to be raw vegetable eaters, and that these vegetables have come from the south, one might incriminate such food. One must remember, however, that locally grown vegetables, particularly 'garden truck,' grown by careless and infected foreigners, may carry infestation quite as well as imported foods. Mature *ascaris* ova may remain alive for years."

Yoshida¹⁰ states that he has very often found on the leaves of lettuce, cabbage, and celery, viable *ascaris* eggs which stuck so firmly that the usual amount of washing did not remove them.

My interest in this subject has been stimulated by the fact that in the past four months three mothers have come to my office each bearing a mature specimen of *ascaris lumbricoides* wrapped in paper and each with the story that the worm had been passed by her child a few minutes previous-

ly. The first child, Tommy W., had lived in Canada for the sixteen months previous to June, 1931, and had been living in Oakland County three months when the first worm was passed. He was a strong, sturdy boy, aged two and one-half years, with nothing to suggest the infestation. Upon treatment he passed four more worms and subsequent stool examinations failed to reveal *ascaris* ova. The second child, Laura R., had always been a light sleeper but showed no abnormalities. One worm was spontaneously passed and subsequent stool specimens failed to show *ascaris* ova. The third child, Marian S., had had her stool examined for *ascaris* ova six months previous to the spontaneous passage of a worm, with negative results. Only one worm was passed and the stools on subsequent examination showed no ova.

Six weeks following negative stool examinations of these three cases X-rays were taken of the intestinal tract of each child after the technic of Archer and Peterson.⁸ X-rays of all three were negative. It may be said with reasonable definiteness that two of these children had had only one worm each in their intestinal tracts. This is, of course, unusual, but points to the probability that the infestation was from a transient source such as food, and that only one viable egg was ingested.

These three cases indicated to me the advisability of routine stool examination in all patients. With the coöperation of Dr. C. C. Young of the State Laboratories, the Laboratory of the Oakland County Board of Health and the Laboratory of the St. Joseph's Hospital at Pontiac, one hundred and seventy-one stools have been examined from children in Bloomfield, Southfield and Royal Oak townships. The only positive for *ascaris* was the first case, Tommy W. The other two cases were found because each passed a live worm. Stool examinations of these two have since been consistently negative. Three other parasitic infestations, one *Oxyuris vermicularis*, one *Giardia intestinalis*, and one *Chilomastix mesnili*, were incidentally found in the routine examinations.

SUMMARY

One hundred and seventy-one stool examinations have been made. These specimens

were obtained from children of families of widely varying circumstances. One patient was found to have five worms and numerous eggs. Two patients each passed one live worm and their stools were afterwards consistently negative for ova. These three cases following negative stool examinations were all examined by X-ray, using Archer and Peterson's technic, and were all found negative. All three of these cases are private patients with good home care and surroundings.

The percentage frequency of ascaris infestation in this series of examinations was 0.58+ per cent in so far as stool examination demonstrated the infestation and 1.75+ per cent in regard to the actual demonstration of the living ascaris. It is acknowledged that the series is so small that these figures have little value.

CONCLUSIONS

Ascaris lumbricoides infestation of the intestinal tracts of children is endemic in Oakland County, though the incidence is low.

Routine examination of stools of children living in Michigan for intestinal parasites is a justifiable procedure.

The feeding of raw vegetables to children may be responsible for parasitic intestinal infestations, and single worms, as in Cases 2 and 3, may well have come from such a source, since their home surroundings are such as to make other sources unlikely.

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OMPHALOCELE CONGENITALIS

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Omphalocele congenitalis or congenital umbilical hernia, strictly speaking, is not a hernia; in this condition, as pointed out by Malgaigne, the viscera have never entered the abdominal cavity. As early as 1691 Ruysch called attention to the fact that an umbilicus is not developed in these cases. The condition is really the persistence of the viscera to remain extra-abdominal due to the maldevelopment of the embryo. It is spoken of as a hernia frequently only because from a surgical standpoint it is customary to do so.

Omphalocele congenitalis is a fairly rare condition, occurring according to Saunders one in 5,000 or 6,000 cases in which all the intestines are found in the sac; when the abdominal contents are found with the intestine such as the liver or bladder it is twice as rare, occurring once in 10,000 cases. Bushan collected sixty-nine cases in the literature; forty-three were in the males and twenty-six in females. Hertsfeld collected sixteen cases, of which twelve had associated with them, cleft palate four cases; fissure of bladder five cases; pubic fissure three cases; spina bifida four cases; cerebral hernia one

case. Among other deformities reported accompanying omphalocele congenitalis are absence of cranial vault, anencephaly, club-foot, hare-lip and hypospadias.

Omphalocele congenitalis may be divided into two types, the embryonic and the fetal. The embryonic type is due to failure of development of the abdominal wall and the hernia or rather eventration may be very extensive, containing, besides intestine, also stomach, liver, or heart. In the embryonic type the fetus is usually stillborn or dies so soon after birth so that little chance for repair of the defect by surgical means is afforded.

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The fetal variety, which is the type of case to be presented, develops after the third month of intra-uterine life and is due to the lateral halves of the abdominal wall failing

excepting possibly hydrocele of the umbilical cord, which might be confused with a urinary diverticulum.

There is little known regarding the de-



Fig. 1

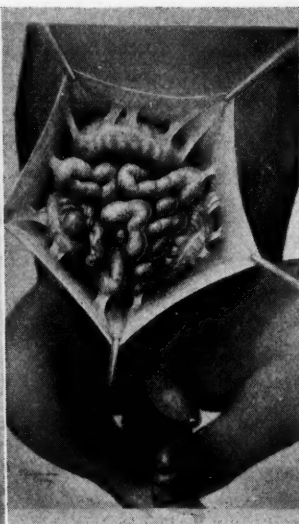


Fig. 2



Fig. 3



Fig. 4

Fig. 1. Drawing of babe at birth. Cord tied.
 Fig. 2. Drawing of sac opened at time of operation, showing many adhesions.
 Fig. 3. Actual photograph of babe at age of ten days.
 Fig. 4. Photograph of babe at age of three months.

to close completely, so that a portion of the intestines projects into the cord itself, where it lies in a sac, composed of a thin semi-transparent membrane made up largely of amnion and peritoneum, in which are occasionally disseminated masses of Wharton's jelly.

The herniated viscera can easily be seen through this semi-transparent membrane. In small hernias if unnoticed during confinement the bowel may be ligated when the cord is tied off with the result that strangulation, followed usually by death and occasionally by a fecal fistula, will ensue.

If untreated and if this accident is avoided this variety of hernia will nevertheless terminate fatally, for, when the cord separates, the peritoneum will become open and septic peritonitis will probably result or the thin coverings slough and peritonitis supervene.

During early fetal life a considerable portion of the small and large intestine normally lies in the umbilical cord or body stalk occupying the exocoelomic cavity. Under normal conditions the intestines gradually recede into the abdominal cavity and the cavity in the cord is obliterated.

There is small chance of mistaking a congenital omphalocele for any other condition

developmental causes of these hernias. Many theories have been advanced, but none of them has much practical value, although they are of some historic interest. Cruveilhier believed that congenital omphalocele is due to pressure on the abdomen of the fetus as it lies in a faulty position.

Scarpa thought it might be produced by traction exerted on the cord by its winding about the body of the fetus.

Ohlfeld suggested that it might be caused by the constant pulling of the vitelline duct on the intestines in the root of the umbilical cord.

St. Hilaire was of the opinion that accidental bands of the adhesions held the viscera outside the abdomen, thus preventing the opening from closing.

CASE REPORT

The baby's mother, Mrs. McG., was a *duipara* who had had a perfectly normal spontaneous delivery two years prior.

Her prenatal care was uneventful. The blood pressure was always around 120 systolic and 70 diastolic. The urinalysis was negative except an occasional trace of lactose. The blood Wassermann was negative.

On March 21, 1929, this baby boy was born spontaneously from a R.O.A. position. This was eighteen days sooner than labor was expected. When examining the baby after delivery a large bulging sac presented itself with the cord which was soft in

consistency and pulsated. The cord was tied several cm. beyond the herniated mass.

An attempt was then made to replace the herniated viscera into the abdominal cavity, but, due partly to the small development of the abdominal wall and due to the many adhesions between the intestines and the peritoneal sac, this attempt proved futile. The sac was then opened and another attempt was made to push the intestines back into the abdominal cavity, but due to the many adhesions and the baby's crying and straining this could not be performed. A general surgeon, Dr. E. V. Johnston, was then called in consultation. The baby was given an ether anesthetic, when about one and one-half hours old. The many adhesions between the intestines and the peritoneum in the omphalocele sac, numbering about twenty in all, were separated.

The opening at the umbilicus was enlarged and the intestines replaced with considerable difficulty because of the small abdominal cavity and the rapidity with which the intestines became distended with gas, while exposed to the air.

All the small intestines, the cecum and appendix, the ascending, transverse and descending colon filled the sac. The liver was not in the sac.

The abdomen was closed in layers with No. 2 plain catgut and we thought the baby was in very poor condition. However, the baby was given saline and heat was applied. It responded quite readily to this treatment and in a few hours seemed much better. For five days the baby was unable to keep water or any kind of fluids in its stomach. It vomited greenish fluid continuously. Eight ounces of normal saline was given under the breast every

morning and 8 ounces of 10 per cent dextrose solution was given under the breast every evening. On the sixth day it was able to retain small quantities of fluids in the stomach. From that time on it rapidly gained the ability of taking milk in small quantities.

The baby appeared to have peritonitis around the third to fourth day, due partly to the infection because the operation was not performed until after the intestines had been exposed to the air for about 1.5 hours and because the abdomen was very tense due to the stretched abdominal wall.

From the fifth to the tenth day the baby developed an intense jaundice possibly due to the excessive amount of dextrose injected.

On the tenth day the baby was photographed and showed quite an extensive skin infection with some sloughing. This sloughing area was treated with 50 per cent alcoholic solution and the skin was drawn together with adhesive, until it was entirely healed, which occurred when the baby was about four weeks old. The baby is still living and well.

CONCLUSION

Congenital omphalocele, if of the fetal type, demands immediate operation, for there is no other way the herniated viscera can be replaced in the abdominal cavity, and if the operation is performed early and under aseptic conditions the results may be surprisingly good.

VINCENT'S ANGINA

A CASE OF LUNG ABSCESS AND INTERLOBAR EMPYEMA FOLLOWING EXTRACTION OF A TOOTH UNDER GAS ANESTHESIA

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We have frequently seen and heard of the damage done to some remote organ or organs following the extraction of a tooth. There are very few cases reported of such accidents due to the organisms of Vincent's angina. No doubt there are more cases of this nature than one is led to believe. Burns¹ in 1926 emphasized the importance of Vincent's infection not only in its obvious relationship as a precursor of pyorrhea, but in its infinite possibilities as a causative agent in other conditions of unknown etiology. He stated that in order to emphasize its importance to the medical and dental profession it should be made reportable.

Thompson² reported a fatal case of brain abscess due to Vincent's angina following extraction of a tooth under procaine hydrochloride. This prompted him as it did us to review the literature, and Vincent's angina was found in connection with one case of acute leukemia, one of pemphigus, hospital gangrene, pelvic peritonitis, industrial wounds, tooth wounds, and two cases of brain abscess.

It is very interesting to note that the case

to be reported presents lesions very similar to those produced by Smith³ in rabbits. He produced fuso-spirochetal disease in the lungs of rabbits with cultures from Vincent's organisms. With certain aerobic and anaerobic cultures he was able to isolate eight organisms in pure culture from the throats of patients with angina. None of these alone produced disease, but a mixture of a pure culture of *Treponema microdentium*, a small fusiform bacillus, a vibrio, and

an anaërobic streptococcus resulted in a typical fuso-spirochetal abscess in the groins of mice and guinea pigs. Pus from these abscesses was inoculated in the trachea of rabbits, which resulted in fuso-spirochetal lesions in the lungs of these animals. The rapidity with which the process developed was remarkable, two rabbits dying of pneumonia within forty-eight hours. One rabbit developed a lung abscess with empyema, and another bronchiectasis.

REPORT OF CASE

J. K., aged thirty-seven, gives an essentially negative past history, and was in excellent health up to the time of his present illness. On February 9, 1932, the right lower second molar tooth was found to be abscessed and was extracted by an exodontist under gas anesthesia. About twelve hours later patient began to suffer with acute pain throughout the entire chest with difficulty in breathing. Temperature was 102 degrees, and the only positive sign found on physical examination was a friction rub in the right lower chest posteriorly. There was also a small dirty ulcer on the edge of the tongue just opposite the space left when the tooth was extracted.

The patient's temperature ranged from 101 degrees to 104 degrees during the following seven days. There was an unproductive cough accompanied by pain, which was now more or less localized in his right chest. He was also very delirious. The physical signs now were some increased dullness in the right chest posteriorly from the fifth intercostal space down. The friction rub was still present, also some coarse râles. There were no signs of consolidation. An X-ray of the chest on February 16 "pointed to pulmonary pathology, incident to an extraction apparently with as yet no indication of breaking down. Subsequent roentgen investigation would be justified to determine the presence or absence of breaking down in the pulmonary tissues."

At this time a sputum examination was negative for tuberculosis, a white blood count was 18,200, polymorphic nuclears 86 per cent, lymphocytes 12 per cent, monocytes 2 per cent. Urinalysis was negative.

On February 22, thirteen days after onset, the patient was taken to the hospital. The roentgenogram of the chest now "reveals a triangular shadow on the right side, on a level with the fifth and sixth intercostal spaces in the axillary line. This triangular shadow has a base of about 10 cm. and the apex is slightly internal to the mid-clavicular line. The edges of this shadow are feathery in appearance. From the roentgenogram the condition has the appearance of an interlobar pleurisy with effusion." A needle puncture was made in the right chest in the sixth intercostal space, in about the posterior axillary line and several cubic centimeters of an intensely foul smelling, dirty greyish pus was removed. A smear of this was taken and was found to be loaded with Vincent's organisms, namely spirilla and fusiform bacilli. Smears were then taken from the ulcer on the tongue and from the cavity left from the recently extracted tooth. These presented the same picture.

On February 24 the patient was taken to the operating room and under local anesthesia the right side of the chest was incised at the sixth interspace and posterior axillary line. Upon opening the pleura about 150 c.c. of a very foul smelling dirty grey pus escaped. A smear of this material also showed Vincent's organisms in abundance.

Postoperative treatment consisted in sodium per-

borate mouth washes; a bi-weekly injection of .6 gms. of neoarsphenamine intravenously; fluids forced by the intravenous, subcutaneous and oral routes; daily irrigation of the chest cavity with Dakin's solution through the drainage tube.

Postoperatively, the patient improved clinically. The ulcer on the tongue gradually disappeared. The delirium also disappeared. Until March 6, his temperature fluctuated between 100 and 103 degrees, and from then on it ranged between 98.6 degrees and 100 degrees. The patient, however, continued to cough, and gradually began to raise more and more sputum which had a very foul odor, and was most abundant in the morning. Repeated sputum examinations showed no tuberculosis, but Vincent's organisms were frequently seen. A blood Wassermann test and blood culture were both negative.

A roentgenogram of the chest on February 26 "revealed a decrease in the density and size of the triangular shadow. There was an accentuation of the markings of the bronchovascular tree."

The patient left the hospital on March 9. He improved rapidly at home. His temperature remained normal most of the time and his appetite improved. He still raised considerable foul smelling sputum, however.

On March 25 another roentgenogram was taken: "the shadow in the right lung field had entirely disappeared. There was an extensive accentuation of the descending branches of the bronchi with infiltration. The picture was that of bronchiectasis." The X-rays were read by Drs. E. R. Witwer and Henry L. Ulbrich.

The patient still raises some foul smelling sputum, and his temperature remains slightly elevated. On April 14 patient's gum in the vicinity of the first lower right molar became swollen and a small greyish white patch was present at the margin. A smear of this again showed Vincent's organisms.

CONCLUSION

1. This report was written chiefly to make dentists and physicians aware of the dangers following the extraction of teeth when Vincent's organisms are present.

2. Cases such as this have been reported in the literature only rarely. No doubt there are more cases of this nature than one is led to believe.

3. Smears of all suspicious gums should be taken before the extraction of a tooth, and if Vincent's organisms are found this condition should be cleared up before any attempt to remove the tooth is made.

4. Our case was one of lung abscess with interlobar empyema due to Vincent's organisms, following the extraction of a tooth under gas anesthesia, with a resulting bronchiectasis. It is interesting to note that this pathology has been produced in rabbits by experimentation.

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INTRAPERITONEAL THERAPY

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The importance of supplying adequate fluids in the treatment of certain surgical and medical conditions has been thoroughly emphasized, especially since the war, and all hospitals are supplied with equipment for this purpose. Equally important is the necessity of sufficient fluid administration in the treatment of acute illnesses in children, although this fact is not fully appreciated by many general practitioners who do pediatric work.

The need of large amounts of fluids in children is due largely to their hydro- and thermolability, and to the fact that the infant body is made up of a much larger percentage of water than is the adult body. In acute illnesses, much water is rapidly lost due to sweating and loss through the lungs, and a loss of weight amounting to a pound or more a day is commonly noted due to this cause. The vicious cycle of fever and dehydration may of itself become fatal if not broken.

The difficulties of administering fluids to infants and children during illness are very real. The coma of diabetes, refusal to take food or fluids, and vomiting, often hamper oral administration and make some other route absolutely imperative. Proctoclysis is impracticable, since fluids are usually not retained unless given very slowly, and children will not tolerate a tube over long periods of time. Hypodermoclysis is painful and allows but small amounts to be given. Intravenous injections are practically impossible except by exposure of the vein, which limits strictly the number of times the procedure may be repeated.

Since the introduction of the intraperitoneal method by Blackfan and Maxcy, this important problem has been largely solved. Much larger quantities may be given by this method than by any other, and clinical observation indicates that the fluids are rather rapidly absorbed. The circulation is not taxed, even when large amounts are injected, and yet the time of administration is only a few minutes. Probably the greatest advantage is that the procedure may be repeated indefinitely without harm to the patient, and the only pain associated with it is the introduction of the needle. It is possible to administer the entire calculated fluid requirement of the child by two or three injections

daily, and when it is desired to give the gastro-intestinal tract a complete rest for one or two days, the method is invaluable.

The technic is very simple, and can easily be carried out in the home, where the majority of children are cared for. The usual gravity method intravenous set may be used, or, as has been found very satisfactory at Memorial Hospital, a set consisting of a 50 c.c. syringe, six inch rubber tubing, a 19- or 20-gauge needle, and a 200 c.c. glass. The set is sterilized and wrapped so that it may be carried anywhere. After scrubbing the hands thoroughly, the set is assembled and the skin sterilized. The needle is inserted by a quick thrust through the rectus muscle on either side of the umbilicus, and the fluid injected as rapidly as the needle will carry it. Some clinics prefer the midline, either above or below the umbilicus, but there is less possibility of leakage if one goes through muscle.

From 10 to 15 c.c. of fluid per pound of body weight may safely be given at one time, but one should watch the respiration carefully, and if signs of interference appear, the injection should be stopped at once. Physiologic saline solution, or Ringer's solution, may be given, but there is evidence that the excess of chloride in these may at times aggravate an existing acidosis. Hartmann has advocated a so-called combined solution which may be given in either acidosis or alkalosis, and which has been found to be serviceable. Five per cent glucose solution in either saline or distilled water may be used in diabetic coma, or as a food when oral ingestion is limited. Whole blood may be given when indicated, and repeated as often as required. One of our cases had eight transfusions, in none of which did a reaction occur. In addition,

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one may administer sera, vaccines, arsenicals, or, in fact, any medication that may be given intravenously.

Any inflammatory condition within the abdomen is, of course, a contraindication, as is any condition producing peritoneal adhesions. Saline or Ringer's solution may be given in the presence of enteritis, although glucose often aggravates the condition. In the presence of extreme distension, the procedure should be used with caution. Puncture of the gut or bladder, while a remote possibility, has never occurred in the experience of those who have used the method widely. Syncope from pressure on the diaphragm need not result if one watches the patient carefully, and does not exceed the limits mentioned above. Reactions, consisting of distension and slight rise

in temperature, may occur if care is not used in the preparation of the materials to be injected, although at times, as in intravenous work, collapse occurs, and, in rare instances, death. Reactions are certainly fewer, however, than in intravenous injections, and, when they do occur, are much slighter.

Grulee puts his finger on the sore spot when he points out that the greatest barrier for the average practitioner to overcome in using the method is a psychical one, since early surgical training leads him to fear the peritoneal cavity. He is inclined to be startled by the use suggested above, and to shrink from using it, even when proof of its efficacy and relative harmlessness is available. However, in my opinion, nothing of greater practicability in the care of sick children has been developed during the past decade.

BILATERAL OPTIC NEURITIS AND ELECTRIC RETINITIS

REPORT OF TWO CASES

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The first case is of a young, recently married woman of twenty-five. She complained of blurred vision, occipital headaches of eight weeks' duration, which showed no periodicity; tinnitus in the right ear, transient periods of pronounced deafness and malaise. Previous to her arrival at the office her family physician called and informed me that she had been advised to have her ethmoids exenterated and her tonsils removed. My examination showed no evidence of paranasal sinus involvement, although she maintained stoutly that she had sinus trouble and had recently obtained large amounts of purulent material from her nose.

The tonsils were small, pale and to all appearances harmless.

She had a well advanced bilateral optic neuritis with papilledema.

Desiring to check my X-ray findings, which were negative, I referred her to a roentgenologist with a request for an examination of the paranasal sinuses and cranium and received the following report:

"The paranasal sinuses were examined stereoscopically in the postero-anterior position. The sinuses are moderately developed. The frontal sinuses are pneumatic. There is no definite involvement of either group of ethmoid cells in a disease process. There is a slight clouding of the inferior portion of the left maxillary sinus, although both maxillary sinuses are pneumatic. There is some evidence of intranasal disease, although the bony nasal septum is fairly straight.

"The skull and sinuses were shown in the left lateral plane. We note the presence of an unerupted third molar which, however, has normal position. The sella is not enlarged nor eroded. There are no increased intracranial pressure changes.

"The skull was also examined stereoscopically in the right lateral position. These films demonstrate no erosion or thickening of either table of the skull. There is no disturbance in the vessel markings and no evidence of increased intracranial pressure or tumor shadow."

A negative blood Wassermann had been obtained about a week before I saw her, but a spinal fluid

taken the day after her visit to the office was reported as XX.

Specific treatment was started immediately by the family physician and was followed by rapid improvement.

The second case is that of a robust man, of thirty-seven, who complained of dimness of vision and floating objects in the right eye. These symptoms appeared a few hours following his observation of an electric welding operation. He was not perturbed, because he had had a similar experience, two years before, accompanied by a more pronounced visual defect, followed by complete recovery.

His vision was O.D. .5 O.S. .8.

The fundus details of the right eye were obscured by a very cloudy vitreous. The left retina was somewhat reddened in the macular region, but no floating opacities were visible. Potassium iodide was prescribed and eight days later the vision in the right eye was normal, when one of the few floating opacities that remained were not in the line of direct vision. Normal vision returned in the left eye on the 18th day.

Except for a few small opacities in the right vitreous the eyes remained normal for 14 weeks, when, following another "flash," the vision of the right eye was reduced to .7 and the vitreous was again quite cloudy. Vision in the left was 1.

Ten days after this latest "flash" the vision of the right eye dropped to counting fingers at 7 feet and the patient complained of a striated, amber colored clouding of the inner two-thirds of the visual field of the right eye.

The ophthalmoscope revealed a haziness of the temporal side of the retina, most pronounced in the region of the macula, which was encircled by a faint white ring. No floating opacities were visible.

A thorough examination by his very competent family physician revealed no possible etiological or contributing factor except a small amount of detritus in the slightly reddened tonsils.

These were removed but no ocular change was anticipated nor obtained.

GALL-BLADDER DISEASE AND DIABETES

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It is a well known fact that there is a constant relationship between diseases of the biliary tract and pancreas and we propose to advance the hypothesis that these are frequently forerunners of, or are associated with, diabetes mellitus. To the old dictum of "Fair, fat and forty, gall stones or gall bladder disease," we propose the additional phrase "potential diabetic." Joslin states that in a series of 1,000 cases of diabetes over 30 years of age, 83 per cent were overweight. He also states that heredity undoubtedly plays an important rôle in transmitting some of the etiological factors, namely, disturbed endocrine function, habits, diet and environment. Both biliary tract disease and diabetes are more common in the female, over forty years of age. As Jewish women tend to lead a more sedentary life and formerly did not pay much attention to calories, they frequently developed one or both conditions. Both diseases are rare in the negro. Pregnancy predisposes to biliary tract disease and indirectly to diabetes. Mann has shown that gall bladder stasis and delayed function do occur during pregnancy. In pregnancy there are frequent metabolic disturbances and altered glandular functions and occasionally these patients develop transitory lactosuria or glycosuria. Repeated pregnancies increase these changes and later the patient may develop diabetes mellitus. Let us quote briefly an example.

Mrs. L., aged twenty-four, overweight, had a definite gall bladder colic when on her honeymoon, lactosuria while nursing her first child, transitory glycosuria with second child, and three or four years later diabetes mellitus. She developed an acute otitis media, mastoiditis, mastoidectomy; severe diabetes followed. She recovered on insulin therapy and careful dietary management and went along fairly well until she became pregnant again. She would not adhere to her diet or take insulin or be checked up. In her eighth month she entered the hospital in a serious condition with diabetic coma, acidosis, etc., and ten days later was delivered of a dead fetus. She is making a fairly good recovery now.

We report this case in detail to show how biliary tract diabetes mellitus gradually developed. In our opinion if she had been subjected to early gall bladder surgery with drainage of the gall bladder or duct, she might have been spared these very serious illnesses. This assumption is based on the clinical results we have seen in many early gall bladder cases and also in some of the more severe diabetics which we herewith present. Our records show that in patients presenting themselves for examination, where we detected hyperglycemia and diagnosed diabetes mellitus, 50 per cent of them gave definite clinical history of biliary tract disease, varying from mild distress to gall stone colic. Many had several attacks.

In this series the oral Graham test was made on eight of these patients and it was positive in seven. The only patient with a negative Graham vomited the dye and the test has not been repeated. In other words 87 per cent gave positive X-ray evidence of biliary tract disease. We have had blood sugar estimations made on most of our gall-bladder cases and have found them to be generally higher than the normal average. Inasmuch as these findings are so constant, we recommend that every patient (over

Name	Age	Sex	Gall Stone Colic	Gall Bladder Distress	Preg-nancies	Sugar in Urine	Diabetes Diagnosed	Blood Sugar	Graham Test	Operation	Post-operative Course	Post-operative Result	Remarks
1. W. L. L.	46	F	3 yrs.	5 yrs.	4	2 yrs.	1929		Pos.	Not yet			Med. tr. op. soon
2. W. H.	34	M	No	3 yrs.	No	2 yrs.	1930	.235	Pos.	Not yet			Med. tr. op. soon
3. F. G.	40	F	No	1 yr.	1	1 yr.	1930	.33	Pos.	Not yet			Med. tr. op. soon
4. C. S.	29	F	No	6 yrs.	0	1½ yrs.	1930		Stones Neg.	Not yet			Med. tr. op. soon
5. C. S. H.	31	F	No	2 mos.	3	2 yrs.	1929		Pos.				
6. I. S.	45	F	9 yrs.	10 yrs.		1 yr.	1931	.235	Pos.	Ectomy (stones)	Smooth	Still has 1 pls. sug.	Med. Man.
7. R. S.	58	F	5 yrs.	19 yrs.	4	2 yrs. & Acetone	1929	.260	Pos.	Ectomy-stones (dochoostomy)	Stormy	Excellent, no sugar	Entered hospital in coma
8. D. F.	65	F	2 mos.	4 yrs.	18	5 yrs.	1926	.180	Pos.	Ostomy (stones)	Smooth	Excellent, no sugar	
9. H. T.	56	F	5 yrs.	4 yrs.	12	4 yrs. & Acetone	1927	.20	No	Resect. G. B. st. (dochoostomy)	Stormy	Very good	Entered hospital in coma
10. L. M.	55	F	6 mos.	1 yr.	0	1 yr.	1930	.220	No	Ectomy Ostomy-stones	Smooth	Very good	
11. J. O.	27	F	1 yr.	1 yr.	2	1 yr.	1931	.159	No	Ectomy-stones	Smooth	Very good	
12. J. Z.	40	F	3 yrs.	5 yrs.	2	1 yr. & Acetone	1931	.117	No	Ectomy-stones Dochoostomy	Smooth	Very good	Hypertension for 5 years
13. C. M.	70	F	10 yrs.	12 yrs.	1	3 yrs.	1928	.111	No	Ectomy-stones	Stormy	Very good	
14. G. L.	76	F	14 yrs.	17 yrs.	14	½ yr.	1931	.154	No	Ectomy Ostomy-stones	Critically ill	Died	Hepatitis-Myocarditis

14 cases—7 positive Grahams—5 acute cases sent directly to hospital. 1 negative Graham.

14 cases—all showed sugar in urine—9 hyperglycemia—2 normal—2 not made.

12 cases complete recovery.

8 cases complete recovery—1 case (14) died—5 cases not heard from.

1 case still has diabetes—(6) ectomy without dochoostomy.

1 case died.

forty) who has glycosuria (excepting cases of renal glycosuria) or hyperglycemia, after proper diet, with or without insulin, should have a very careful investigation of the biliary tract, Graham test, liver function tests, etc. Lyon's method of medical drainage of the gall bladder may be used as a diagnostic or therapeutic aid. Repeated examinations may be necessary.

Surgeons who operate upon the gall bladder usually find: (1) Evidences of gross scarring of liver near the gall bladder fossa. Some thickening or lobulations and occasionally changes in color and consistency of liver; (2) Inflammation of the lymphatics along the ducts, adhesions; (3) Varying degrees of induration or edema of gastro-hepatic omentum and pancreas; (4) Varying degrees of inflammation of walls of gall bladder and ducts; (5) Mild catarrhal to acute hemorrhagic pancreatitis. We should (when possible) remove sections of the liver and gall bladder for pathological examination.

We have had many cases of empyema of the gall bladder and acute exacerbations of chronic cholecystitis and pancreatitis enter the hospital with marked glycosuria, high blood sugar and even some with diabetic coma. After careful medical management and preparation these patients were operated upon, and either a cholecystostomy or a cholecystectomy with drainage of cystic or common duct performed. We have been more than pleased with the results obtained, and so are the patients. Several of them have made excellent complete recoveries and are now sugar-free without insulin on ordinary diets.

Whipple reports that in many similar cases carefully watched at the Presbyterian Hospital removal of the infected gall bladder or the drainage of the infected common duct has resulted in permanent recovery from the symptoms referable to the diseased pancreas.

Many patients have biliary tract disease without either classical or even indefinite symptoms referable to these organs. In fact in the routine careful examination of the gall bladder and liver as a part of every abdominal operation one is surprised at the number of so-called "silent" calculus gall bladders.

If we have a patient with glycosuria with or without hyperglycemia and the clinical

history or the laboratory data show evidence of biliary tract disease, and the patient does not readily respond to medical management, we believe that surgical treatment should be instituted before more serious complications ensue.

Pathologists for many years have pointed out to us the marked increase in the connective tissue of the pancreas in diabetes mellitus; it is usually of the interacinar or intra-lobular type according to Opie. This increase in connective tissue may be caused by an arteriosclerotic or endarteritic condition of the vessels, by a syphilitic process or by blocking of the ducts. Often it is the result of long standing and persistent infection of the pancreas which communicates freely with the biliary tract, duodenum and transverse colon.

The pathologist finds frequently, in fatal cases of diabetes, marked changes of the liver, biliary cirrhosis, hepatitis, fatty degeneration and bile colored pigmentation of the cells; similar changes are found in the pancreas and liver in long standing biliary tract disease. Osler described some of these changes many years ago.

We have attempted to illustrate how biliary tract disease and diabetes mellitus occur in the same type of individual over forty years of age, that the onset of biliary tract disease may precede diabetes, that the infection of the biliary tract may cause chronic pancreatitis and thereby predispose the patient to diabetes, that similar pathological changes may be found in the liver at autopsy. We have shown that, in a few cases where both diseases were present, proper gall-bladder surgery has resulted in permanent cure of both diseases.

We suggest that in all cases of diabetes (over forty years of age), excepting those in coma, the biliary tract should be carefully studied. This should include a careful history, liver function tests, Graham test, blood sugar estimations. If these tests show impaired function, persistent hyperglycemia and glycosuria after careful medical regime, we believe these patients should have combined surgical and medical treatment.

We believe that a great deal of morbidity would be saved if all patients of both types were subjected to these careful examinations.

MICHIGAN'S DEPARTMENT OF HEALTH

C. C. SLEMONS, Dr.P.H., M.D.,
Health Commissioner
LANSING, MICHIGAN

VACATION TYPHOID

The season for vacation typhoid is now on. The incidence of this disease in Michigan since the first of January has been somewhat higher than for the two or three years previous. Several local outbreaks have accounted for this increase.

Whenever we have the combination of typhoid carriers or cases plus lack of sanitary measures it is inevitable that typhoid cases will result. Such circumstances are bound to occur wherever we have a number of people congregating at resorts and other places where there is a lack of properly controlled water supplies, sewage disposal, and handling of milk and other foods.

More than the usual number of cases of typhoid have recently been traced to carriers. It is generally conceded that most of our typhoid fever which now occurs is the result of spread of infection from carriers.

City dwellers are apt to think that they get typhoid fever by visiting rural places during vacation. Although this is quite true, it is also true that the typhoid carrier who is relatively harmless while living in the city, becomes a grave menace while living at a summer resort. In other words the typhoid carrier is apt to take typhoid to and spread it among his fellow vacationists as well as among the rural inhabitants with whom he comes in contact.

In order to be safe the vacationist should be warned to be immunized, to guard himself against polluted water, to use only pasteurized milk, and if impossible to secure pasteurized milk to boil his milk, and to guard against flies.

In addition to this he should be advised to be ever on the alert against eating food that may be handled by a typhoid carrier. His best friend and most intimate associate may be that carrier.

C. D. B.

RESORT INSPECTION

The annual inspection of summer resorts was started by the Bureau of Engineering on July 5, with the state districted and an

inspector assigned to each district. Following the plan initiated last year, representatives from the Michigan Department of Health are to carry on the general inspection and dairy inspectors from the Department of Agriculture are to handle all milk inspections.

Resorts are checked on water supply, milk supply, disposal of sewage, garbage and fish offal, camp site, food handling and bathing. According to the showing made in the various items, the resorts will be rated on a graded scale, those receiving percentages between 90 and 100 being rated as "A," between 80 and 90 as "B," between 70 and 80 as "C," and 70 or below as "D" or unsatisfactory. In 1931, of the 1,791 resorts visited, 18.6 per cent rated "A," 30.1 per cent "B," 20.4 per cent "C," and 19.4 per cent "D."

This year the four district health departments sponsored by the Children's Fund, the Newaygo Health Unit, and the Barry, Kent and Allegan County Health Departments are making the inspections of resorts in their territory. Their representatives are deputized by the Department of Agriculture to inspect milk supplies.

HIGHWAY WATER SUPPLY INSPECTION

The roadside water supply survey for the protection of highway travelers was begun in June. Four representatives of the Bureau of Engineering were assigned to collecting samples, inspecting sources, and posting the yellow metal approval signs on the safe supplies. As usual, the state trunk lines are to be covered.

During the seven years in which summer work in highway water supply supervision has been carried on, the percentage of safe sources has increased from 63.7 in 1925 to 81.6 in 1931.

A LABORATORY STUDY

As a part of the program for the checking of laboratories making diagnoses of communicable disease in Michigan, a study of the reliability of serum diagnosis of syphilis has been conducted by the bureau

of laboratories of the Michigan Department of Health.

There are fifty laboratories in the state making serological tests for syphilis and to each of these laboratories five serums were sent. These serums were obtained from five individuals, about 250 c.c. of blood being taken from each one. Four of these five were known syphilitics under treatment. The other was supposedly not infected. The blood serum was passed through Seitz filters and handled aseptically to avoid contamination and its consequent effect on serums which had to be held for some time before the tests were made. This handling apparently did not affect the tests for they were run repeatedly in the state laboratory with a number of different methods. Even after standing for more than three weeks there was little change in the results.

Five specimens were sent to each of fifty laboratories and reports were received from 47 laboratories. Three laboratories failed to report, one of which did not receive the serum. Three laboratories failed to receive serum but second sets were sent to two of these.

The reports for the most part were closely correlated and indicate a reasonable degree of accuracy in the majority of laboratories. No analysis of the results has been attempted as yet. It is interesting to note that 44 laboratories reported the Kahn test, 12 the Kolmer, 3 the Kline and 10 some other complement fixation test. A more detailed analysis is impossible at the present time. Many laboratories are using two or more tests but the form of report used did not request information as to which test was given preference.

CHILD HYGIENE

A year's prenatal nursing program carried on under the supervision of local doctors has just been completed in Berrien County by Martha Giltner, R.N. During the year Miss Giltner has had 520 prospective mothers under her supervision and has made 856 prenatal calls, 524 postnatal calls, and 98 calls on infants. A prenatal nursing program in Allegan County will be started by Miss Giltner about July 15.

A program for prospective mothers and mothers of infants and young children has been carried on for the past year in Eaton County by Caroline Hollenbeck, R.N. One hundred and thirty-seven prospective

mothers were under her supervision during the year, during which time she made 2,352 home calls. Miss Hollenbeck has now begun a Breast Feeding Campaign in Ionia County.

Breast Feeding Campaigns are being conducted in Leelanau, Montcalm, Tuscola, Ontonagon and Ionia Counties. Nurses carrying on the work also deliver certificates of registration of birth to parents of children born in the counties listed.

Women's classes in infant and child care are now being conducted in Mason, Marquette and Delta Counties, and special nutrition talks are being given by Helen Linn, R.N., in Marquette County.

AN ITALIAN VISITOR

Doctor Oscar Palesa of Rome, Italy, has been a guest of the Michigan Department of Health since June 4. Doctor Palesa has just completed a course in Public Health Administration at the Johns Hopkins School of Hygiene, prior to which he was Director of the National Institute for the Protection of Infancy and Maternity in Rome, Italy. He is at present visiting staff members of the Bureau of Child Hygiene and Public Health Nursing in Berrien, Leelanau, Montcalm and Mason Counties, where special types of maternal and infant welfare programs are being conducted. He will also visit Wexford, Genesee, Midland, Saginaw and Barry County Health Units and the Detroit Department of Health before leaving the state.

STAPHYLOCOCCUS FOOD POISONING

Edwin O. Jordan, Chicago, has noted that the staphylococcus type of food poisoning differs in several respects from the more familiar type, due to members of the Salmonella or parathyroid group. There is a distinct difference in the incubation period. Staphylococcus food poisoning usually develops within a few hours after the toxic substance is swallowed. In the outbreaks thus far traced to this source, nearly all the persons affected have manifested symptoms within four hours, although rarely symptoms have appeared later. Human volunteers, of whom the author now has a record of approximately 100, almost invariably show the first objective symptoms in from two to four hours after swallowing toxic staphylococcus filtrates. Vomiting appears with considerable regularity about three hours after the feeding. No deaths have yet been observed from food poisoning of the staphylococcus type. In the four outbreaks definitely traced, twenty persons are known to have been acutely ill, without any fatalities. The same is true of the instances reported by Barber and by Ramsey and Tracy, living staphylococci as well as their products being swallowed in these cases. In four additional out-

breaks summarized in which there is strong evidence that staphylococci were the inciting agents, 206 persons were affected, without a death. Approximately 100 human volunteers who have become ill after swallowing sterile toxic filtrates have all recovered completely. The symptoms are, however, in some cases alarmingly violent and accompanied by great prostration. The author does not believe that it can yet be said that this form of food poisoning is without danger to life.—*Journal A. M. A.*

TREATMENT OF OBESITY WITH LOW CALORIC DIETS

Frank A. Evans and J. M. Strang, Pittsburgh, used low caloric diets in the routine treatment of 187 obese patients. These 187 patients lost 5,659 pounds, an average of 30 pounds (13.6 Kg.). The average duration of the dieting period was 8.7 weeks. The average weekly weight loss was 3.5 pounds. Practically all patients lost weight more rapidly during the first four weeks than later. The 133 patients for whom weight changes are available for this period lost an average of 16 pounds in this first month. Since the rate of weight loss is fundamentally determined by the difference between the intake and the output of energy, the course in any given case was influenced primarily by the fluctuations in energy output. The tendency for the basal metabolism to reduce to normal levels after from two to three months was an important factor in the relative slowing of the rate of progress after prolonged dieting. On the basis of their observations the authors conclude that the excess weight of the obese is inactive storage tissue. The level of oxygen exchange in the obese is high when related to the ideal weight, which is a measure of the actively functioning body tissue. Diets containing 1 Gm. of protein and 0.6 Gm. of carbohydrate per kilogram of ideal weight and no fat, other than that inseparable from the protein ration, afford menus of from 400 to 600 calories on which these patients lose weight rapidly. The patients are not hungry. They report an increased feeling of well being and resistance to fatigue. Headaches, minor disorders and frequently dysmenorrhea are relieved early in the period of dieting. The satisfactory clinical results are obtained because only the inactive excess fatty tissue is being removed. The vital tissues are not wasted as in starvation, as shown by careful studies of oxygen, nitrogen and creatinine metabolism. Because of physiologic strain which obesity throws on the organism, one evidence of which is the high level of basal metabolism, thyroid extract and other agents which increase the total energy output are contraindicated. A few patients, perhaps not over 2 per cent, do not lose weight with practical rapidity by diet alone. These patients cannot be differentiated from the others by history or physical examination. They may be recognized with assurance by careful observations of the rate of weight loss and of the basal metabolism during a period of dieting. In these patients, carefully regulated doses of thyroid are beneficial in conjunction with dietary treatment.—*Journal A. M. A.*

DIAGNOSTIC INACCURACY IN TUBERCULOSIS OF BONE, JOINT AND BURSA

Joseph E. Milgram, Iowa City, reviews the clinical impressions that he obtained in the study of 142 cases of tuberculosis of bone, joint and bursa which were verified in the pathologic laboratory. Although the classic picture emphasizes particularly the insidious onset of joint tuberculosis, in 29.5 per cent of the cases the onset was sudden. As to the relation of trauma, nothing definite could be adjudged

save that the appearance of symptoms after an unusually severe injury followed often by prolonged incapacity for labor was a frequent observation. Thirty-nine, or 26.7 per cent, of the entire group stated that the pain was severe at the onset, whereas 103, or 73.2 per cent, presented the classic picture of mild to absent pain. The insistence on mild pain in "closed tuberculosis" is not justified in this material. The variability of signs was marked, and statistical analysis of factors such as the degree of muscle spasm, muscle atrophy and functional limitation was not found possible. The anatomic location often modified signs considerably. So, diaphyseal lesions exhibited considerable local tenderness. Thus, synovial lesions confined to distant recesses of the knee joint presented minimal signs, whereas articular destruction was characterized by obvious limitations of function on examination. The rapidity of appearance and the extent of abscess formation, for example, depended not only on fascial plane relationships but also on the personal equation of the patient and on the organism, a quantity not susceptible of mathematical expression. The monarticular or local character of surgical tuberculosis appears to be overstressed in the classic description. In this series of proved cases thirty-five, or 32.7 per cent, presented two or more lesions. In several cases this was responsible for a diagnosis of chronic infectious arthritis, corrected only after biopsy. Roentgen examination, while usually helpful, was often the reverse. In fifty-three cases, such examination was of no aid or was misleading. The appearance of free bodies in the knee, or local bone formation in uncomplicated tuberculosis of the spine, for example, resulted erroneously in the diagnosis in the one case of osteochondritis dissecans, in the other case of hypertrophic arthritis. The value of a negative tuberculin test in excluding tuberculosis in a moderately ill subject appeared to be amply confirmed in the series. However, the necessity of not accepting a report of a single dose of tuberculin as a negative report was apparent. Of all the simple diagnostic aids, a carefully controlled and repeated intradermal tuberculin test, if negative, is of greatest value in excluding tuberculosis. Experienced pathologists frankly admit their frequent inability to recognize tuberculous tissue grossly, particularly in the early cases that are being submitted to operation in these years. Unless the typical tubercle or caseating focus is visible, the tissue is grossly indistinguishable from that in a half dozen other chronic inflammatory conditions. A frozen section helps as a rule. In the author's series, it had not been utilized in many cases. But even with microscopic section, errors may frequently be made. In twelve cases of this series, section of a tissue removed for biopsy failed to reveal the nature of the lesion. "Chronic inflammation" alone could be diagnosed. Inoculation of guinea-pigs, however, demonstrated the organism in each of these twelve cases. Microscopic study alone is not reliable. The isolation of the organism is the only conclusive evidence.—*Journal A. M. A.*

DIABETIC LIPEMIA RETINALIS

Lillian A. Chase, Regina, Sask., describes the thirty-seventh case of diabetic lipemia retinalis. The condition cleared up in seven days on insulin. Thirty-seven analyses of the blood for total lipids, total fatty acids and cholesterol were made. The blood lipids became normal in thirty-six days; the total lipids and total fatty acids dropped rapidly; the cholesterol dropped slowly and showed fewer daily fluctuations. The patient is now, one year later, 52 pounds (23.6 Kg.) heavier than on admission, and is sugar-free on 20 units of insulin daily.—*Journal A. M. A.*

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AUGUST, 1932

"I hold every man a debtor to his profession, from the which as men of course do seek to receive countenance and profit, so ought they of duty to endeavor themselves, by way of amends, to be a help and ornament thereunto."

—Francis Bacon

EDITORIAL

MEDICAL ETHICS *vs.* BUSINESS ETHICS

A nationally known surgeon is reported to have advised the adoption by medicine of the methods and practice of big business, among them advertising and practising by groups. This advice has prompted Dr. Manwaring, who has contributed to this Journal a series of articles on medical economics under the general heading Can We Afford

State Medicine, to pay his respects to big business in the final paper of the series which appeared in the July number. Much has been written and spoken by the laity, mostly in a disparaging tone, on the subject of medical ethics. We do not hope to improve editorially on Dr. Manwaring's final paper, but the subject of medical ethics and business ethics is perennial in its importance and freshness. Had business in its widest sense adopted a code of ethics analogous to the time honored rules of conduct of the medical profession which have come down to us from the time of Hippocrates, we might be in a vastly different social condition today. Medical ethics has presented difficulties to the average layman while it has been his protection.

We are led to propound the question as to what is the object of all human activity? The object of law is the securing of justice and justice in the last analysis is for the good of mankind. The object of art is the spiritual uplift of mankind. But what is the object of business? The success of a business man according to ordinary standards depends upon the amount of wealth he has accumulated. He is deemed successful if he sells a large quantity of goods. No questions are asked as to whether the goods have any social value or not. They may consist of patent medicines or of commodities which have a detrimental effect on the consumer. Trade seems to be an end in itself and advertising may be pushed to the point where it stimulates needs in order to increase sales, so that even legitimate products may accumulate out of all proportion to human needs.

Dr. Manwaring has shown up the major sins of big business. No need of repeating them. We feel, however, that there are exceptions and that business institutions exist whose primary object is to serve mankind and where dividends are made secondary to service. Many publishers, for example, serve the spiritual needs of the people in the production of books and magazines of quality often at a very low margin of profit. The more nearly business approximates the spirit of the ethics of medicine the more unselfish and humane is the service rendered. Probably a little application of the ethical principles of medicine to business and politics will assist in the process of recovery from the deplorable mess in which the world finds itself today.

A NEW WAY OF SLENDERING

The Province of Quebec has imposed a tax on all meals costing \$1.00 or over, devoting the money collected to the various hospitals of the Province. Result: a reported falling off in income of \$100,000. To make up or to avoid a deficit the government has decided to impose the tax on all meals costing thirty-five cents or more.

WAYNE COUNTY MEDICAL SOCIETY

In our editorial comment on county society affairs the editor has tried to avoid undue attention to the Wayne County Medical Society, of which he has been a member for nearly a quarter of a century. However, in a sense, conditions affecting the members of the Wayne County Medical Society are of more than local importance. Wayne County, containing within its boundaries the metropolis of the state, is subject to problems arising out of the depression in a more aggravated form than any other part of the state. So that we are forced to an intensive study of them.

Two years ago the Wayne County Medical Society elected a president, Dr. J. M. Robb, who is now president-elect of the Michigan State Medical Society. At the same time, instead of a vice-president a president-elect was chosen, namely, Dr. H. W. Plaggemeyer. The innovation has justified the wisdom of the members. Dr. Plaggemeyer, during Dr. Robb's term of office, was conscientious and persistent in the matter of acquainting himself with the duties involved and he now retires from the presidency with the kind appreciation of the society for his wholehearted services. Both he and his predecessor, Dr. Robb, have held office during the most trying times in the history of the medical society. If either has had other than the wholehearted gratitude of the society we have never heard it. Dr. Plaggemeyer and Dr. Robb will serve the society for several years to come in the capacity of trustees. Dr. Robb brings his experience this year to the presidency of the Michigan State Medical Society.

Dr. H. Wellington Yates after a year of intimate contact with the affairs of the Wayne County Medical Society as president-elect took office as president on July 1.

Dr. Yates has been a member ever since his graduation. He possesses a pleasing personality and his long experience first as general practitioner and later gynecologist and obstetrician well qualifies him for the new office.

Dr. A. W. Blain now holds the office of president-elect. He has an experience and contact as member of the organization extending over a score of years. His position as member of the welfare commission for the past few years peculiarly fits him for the office of president when he will assume it a year hence. Dr. Blain as an administrator of the welfare commission has always been on the side of economy even when sometimes thwarted by influences over which he had no control. He has furthermore endeavored to conserve the interests of the medical profession when the charity of the medical profession was being much abused.

FEARS

Perhaps the most universal phenomenon attendant upon the world-wide depression is the increase of fear which is never wholly absent from human beings. The primal urges of man—yes of all animals—are self-preservation and the propagation of the species. Fear is a protective instinct. In primitive life it was manifest in the mental alertness necessary to protect the individual from wild animals and from the capricious forces of nature. Intelligent human beings are ever seeking security for themselves and for their dependents, hence the constant compelling force that disposes us to lay up for the proverbial rainy day. The past three years have seen this security badly jeopardized for everyone and in many instances swept away entirely, leaving the individual stranded at a time when it is impossible to regain a foothold in the race of life.

The desire for security has disposed men to stress and perhaps to overemphasize the importance of material things as if complete satisfaction could ever be through material objects. Carlyle once said if all the confectioners and upholsterers of Europe were to try to make one boy happy, they would not succeed above an hour or so, for the school boy has a soul as well as a body.

In times like these, men fear to lose what they have acquired. Their suspicion is directed towards other men. Bertrand Rus-

sell, who has uttered many thought-provoking sentences, once said:

"At the present time the fiercest and most dangerous animal with which human beings have to contend is man and the dangers arising from purely physical causes have been very rapidly reduced. In the present day, therefore, fear finds little scope except in relation to other human beings, and fear itself is one of the main reasons why human beings are formidable to each other. It is a recognized maxim that the best defense is attack; consequently people are continually attacking each other because they are expecting to be attacked. Our instinctive emotions are those that we have inherited from a much more dangerous world, and contain, therefore, a larger proportion of fear than they should; thus fear, since it finds little outlet elsewhere, directs itself against the social environment, producing distrust and hate, envy, malice, and all uncharitableness."

The study of human motives is therefore of paramount importance at the present time, even though nothing very definite may be the outcome. A noted English philosopher of the last century, F. H. Bradley, once said: "On all questions, if you push me far enough, at present I end in doubts and perplexities." This sentiment seems to characterize pretty well the blind alleys in which we find ourselves in our endeavor to think our way out of our economic and other difficulties.

THE HORNS OF A DILEMMA

There is a strong movement on foot in Detroit to limit the city budget to \$61,000,000, decreasing the amount a million each year for the next five years. The council claim it cannot be done, that to attempt it will lead to chaos. On the other hand, to go on as in the past years will lead to confiscation of thousands of homes on which the owners are unable to pay taxes. Choose your horn.

HIGHER EDUCATION

The subjects of theses for the degree of Doctor of Philosophy at the June graduation ceremonies of our universities are at least interesting even though unintelligible to the rank and file of *genus homo*. Here are a few: Time Control in Speaking; On the Application of Divided Differences to

Approximation; The Motivation of Exits in Greek and Latin Comedy; The Utilization of Xylose by the White Rat; A Spectrographic Study of RT Aurigæ; The Cyclic Changes in the Ovary of the Prairie-Dog, *Cynomys leucurus* Merriam.

OVERPRODUCTION

"Overproduction! overproduction; runs it not so? Ye miscellaneous, ignoble manufacturing individuals, ye have produced too much! We accuse you of making above two hundred thousand shirts for the bare backs of mankind. Your trousers too, which you have made, of fustian, of jane and woollen cloth, are they not manifold? Of hats for the human head, of shoes for the human foot, of stools to sit on, spoons to eat with. You produce gold watches, jewelry, silver forks, chiffoniers, stuffed sofas. You have produced, produced;—he that seeks your indictment, let him look around. Millions of shirts and empty pairs of breeches hang there in judgment against you. We accuse you of overproducing shirts, breeches, hats, shoes and commodities in frightful abundance. And now there is a glut and your operators cannot be fed."

From the tone of this paragraph it might have been written today. The problem of overproduction resolves itself into one of distribution—placing accumulated goods and merchandise into the hands of the consumer. The paragraph quoted was written about one hundred years ago by Thomas Carlyle, fulminating against the manufacturing and commercial interests of Britain, whom he blamed for an unemployment situation analogous to that which prevails at the present time.

A BIT OF MEDICAL HISTORY

SALERNO

An attempt has been made to trace the current of Greek learning from its source from the fifth century B. C. through the post-Hippocratic sects, the Alexandrian medicine in Rome, Galen, the post-Galenic writers or the Byzantine school to the Nestorians from whom the Arabians caught inspiration and enriched the Greek tradition by making translations anew from the original manuscripts. Through the Arabians, Greek learning was passed on to the Mediterranean countries of Europe, namely, to Spain, Southern France and Italy. However, during the millennium since the death of Galen little or nothing was added. When we come to seek a reason the answer is largely the domination of scholasticism on medieval thought.

Let us digress for the moment to see what scholasticism means. "The intellectual

sterility of the middle ages," according to Hudson,* "was largely due to ecclesiastical authority and the divorce of man from nature, in consequence of which the mind was forced both to work within the narrow limits of prescribed dogma and to seek the materials for its speculation in metaphysical principles rather than in objective reality." Philosophy took on the characteristics of a game in which argument was indulged in without any reference to the truth of the conclusion and with almost no attempt to observe the facts. It goes without saying that such an attitude meant almost the complete arrest of any real scientific work. Any attempt at an objective study of nature meant that the experimenter was playing into the hands of Satan. Literature abounds in instances in which the honest seeker after the truth by objective study was severely rebuked. Rabelais' doctor Manardi was held to be a dangerous radical when he maintained that in the study of disease attention to the beating of the pulse was more important than speculation as to the position of the stars. Some notion of the position of what might be called the prototype of modern research, may be learned from such legends as that of Faust. Faust, who said, "Here I stand with all my lore, poor fool no wiser than before," was considered a conjurer. Roger Bacon, the lone scientific mind of the thirteenth century, was the victim of twenty years of persecution and imprisonment, and for a long time, long after his death, was held by the common superstitious mind to have been a practitioner of the black arts. Scholasticism aimed at proving that the truth of revelation was also the truth of reason. All ratiocination was an effort to verify conclusions long since decided upon by the church or, in medicine, by Galen. New truth was unwelcome. Scholasticism was ridiculed by Erasmus in his "Praise of Folly," a little book by the great humanist of the latter half of the fifteenth century which we might all read for profit as well as entertainment. Erasmus was a contemporary of many of the schoolmen. After paying his disrespects to them he concludes: "Add to these some of their tenets and opinions, which are so absurd and extravagant that the wildest fancies of the Stoics, which they so much disdain and decry as paradoxes,

seem in comparison to be just and rational; as their maintaining that it is a less aggravating fault to kill a hundred men, than for a poor cobbler to set a stitch on the Sabbath day; or, that it is more justifiable to do the greatest injury imaginable to others than to tell the least lie ourselves. And these subtleties are alchymized to a more refined sublimate by the distracting brains of their several schoolmen; the realists the nominalists, the Thomists, the Occamists, the Scotists; these are not all, but the rehearsal of a few only as a specimen of their divided sects; in each of which there is so much of deep learning, so much of unfathomable difficulty, that I believe the apostles themselves would stand in need of a new illuminating spirit if they were to engage in any controversy with these new divines."

"Whenever obsequious reverence is substituted for bold inquiry, truth, if she is not already at hand, will never been attained," wrote Hallam.*

* * *

It was during the late medieval period that universities came into existence for the first time. The ancient Greeks and Romans had no universities in the sense that the word has been used since the twelfth century. The excellent scholarship of the Greeks was not under the custodianship of institutions of learning. Socrates, Plato and Aristotle gave no diplomas such as a modern student would demand if he attended a certain number of courses of lectures. It was not until the twelfth and thirteenth centuries that the beginning of organized education with which we are familiar today. Since the twelfth century education has travelled a long way. The medieval university had no libraries, laboratories or museums or endowed buildings and no board of trustees or regents. The medieval university was in a very real sense "built of men," yet the historic continuity of the university of the present century with the medieval University of Paris or Bologna is unbroken. The first institutions of learning were the University of Paris 1110; Bologna 1113; Oxford 1167; Montpellier 1167; and Padua 1222. The occasion was the revival of learning which is known as the Renaissance of the twelfth century. (The term is usually applied to the movement to-

*The Story of the Renaissance by W. H. Hudson.

*History of the Middle Ages. Henry Hallam.

wards enlightenment of the fourteenth and fifteenth centuries.) So long as knowledge was limited to the bare elements of grammar, rhetoric, logic, arithmetic, astrology, geometry and music the so-called seven liberal arts of the early middle ages, there could be no universities. During the twelfth century, however, western Europe witnessed an influx of new knowledge through Italy, but largely, as we have seen, through the Arab scholars of Spain in the form of works of Aristotle, Euclid, Ptolemy and the Greek physicians; plane and solid geometry were introduced, which have been taught in schools and colleges ever since. The Arabic numerals, as has been mentioned, took the place of the laborious Roman numerals in mathematical calculation. In law, and particularly in medicine, men had access to the ancient learning which burst the bonds of cathedral and monastery and made the learned professions possible. Medicine was henceforth to be associated with these institutions of learning. To this statement the medical school of Salerno stands out as an exception. Salernum was always during its existence a "City of Hippocrates" and nothing else. Here the medical writings of Hippocrates and his successors were expounded and developed on the side of anatomy and surgery. While, as we shall see, its obscure origin was in the undated past, of Salerno as an academic organization nothing is known before 1231, when the Emperor Frederick II undertook the standardization and regulation of its degrees. It was essentially an institution of medical learning and had no influence on the growth of university institutions.*

* * *

Salerno is situated on the Gulf of Paestum in Italy, about thirty-five miles to the southeast of Naples. By its Latin name Salernum it was first known as a Roman Colony in 194 B. C. It was recognized as a health resort at an early date by the monks of Monte Casino who established monasteries in the city. The establishment of the medical school on a scholastic basis was considered by many to have been due to their influence. Tradition has it also that the famous school was founded by four physicians, namely, a Jew, a Greek, a Saracen and a Latin. The beginnings of the school

are obscure. The first teachers probably never thought of founding a school. Little by little their reputation extended beyond Salerno so that many wandering students were attracted to the town. Cumston believes it is not improbable that the institution developed as a school about the time of the fall of the Roman Empire. There is but very little recorded of it before the year 1000 A. D. The literary activity of the school of Salerno began at about the middle of the tenth century. The Salernitan physician of the time emphasized and reproduced the works of Arabic, Greek and Latin authorities. Their other contributions to medicine were not particularly noted for originality. Among the most prominent men of the school of Salerno were Garipontus (circa 1040), who compiled a work, "Passionarius Galenti," which was for a long time an authority on therapeutics, and Petrocillus, who wrote a work on The Practice of Medicine (1053). The great service rendered the History of Medicine by Garipontus consisted in transmitting to the school of Salerno the writings of the Græco-Latin authors before knowledge of the Islamic writers was introduced.* Among the Salernitan savants must be mentioned Trotula (circa 1059), a woman of noble birth who wrote on obstetrics and gynecology, hygiene and other medical subjects. Her principal work was *De Morbis Mulierum et Eorum Cura*. She is known in medical history as Mother Trot.

The school of Salerno is one of the earliest, if not the first, to adopt the custom of co-education in medicine, for in the fifteenth century we have the names of three other graduates, Costanza Calenda and Abella, who wrote on medical subjects. Abella was the author of two works in Latin verse, "De Naturæ Seminis Homonis" and "De Atrabile." Rebecca Guarna, also a product of this school, lived during the thirteenth century. Among the remedies devised by the lady physicians of the time were one for sunburn, an ointment to keep the hair soft, besides a number of formulæ for purely cosmetic purposes. Astringent injections were employed for leukorrhea, "*Al exsiccandam superfluiditatem matricis, fiat fomentum ex aqua decoctionis ejus (calamentum). Hoc ut testantur mulieres Salernitanæ, satis valet.*"*

*The Subject of the Rise of Universities is very interestingly described by C. H. Haskins of Harvard University.

*Cumston, An Introduction to the History of Medicine.

Other physicians of this school, about 1100, were Johannes Offlacijs Bartholomæus, the two Cophons, father and son perhaps, and Ferrarius. The younger Cophon in the early part of the twelfth century wrote on "De Anatomica Porci" the anatomy of the pig, and also a work on practice of medicine. We are informed that Salernitan physicians varied their therapeutic agents in the treatment of disease according to the financial condition of the patient. Medicines were administered in more agreeable form for those who could afford to pay for the more palatable potion. Nicholas Præpositus was director or principal of the Salernitan school about the middle of the twelfth century. He was the author of a pharmacopœa as well as another book called "Quid Pro Quo," which presumably indicated drugs that might be substituted if the original indicated was not in stock. Associated with the Salernitan school is the name of Constantine the African. Born at Carthage, where he attained his young manhood, he is said to have wandered in the Orient for thirty-five years, where he quenched his thirst for knowledge at the medical fonts of Bagdad, India and Egypt. He returned to visit the school of Salerno, where his influence consisted chiefly in introducing the writers of the Islamic School.

* * *

"The best known literary product of the Salerno School," says Francis Packard, "was the famous poem which survived many hundred years in great esteem as a standard textbook, and which is the best known literary survival of medieval medicine." This is known as *Regimen Sanitatis Salernitatum*, first circulated in manuscript copy; twenty editions of it were printed between the years 1480 and 1500. The poem was written for the benefit of Robert, Duke of Normandy, the eldest son of William the Conqueror. Robert passed the winter of 1096 at Salerno on his way to the Holy Land as a crusader. He returned to Salerno three years later to receive treatment for a poisoned wound which he had received. The Regimen was presumed to be of composite authorship but it is generally thought to be the work of John of Niclau, head of the faculty at the time it was written. It is a handbook of domestic medicine and not a work for the enlightenment of the medical profession. It was written in verse, a custom that prevailed at the time in the dis-

cussion of many subjects. Being copied many times, the text varies; that accepted as most authentic is by Arnold of Villa Nova (1235-1311) who studied medicine in Paris and at Montpellier, where he taught for ten years. The poem is characterized by plain statements of rules on hygiene. The first few lines of the English translation* of the Regimen run as follows:

"Great harmes haue growne, & maladies exceeding,
By keeping in a little blast of wind:
So Cramps and Dropsies, Collickes haue their
breeding,

And Maized Braines for what of vent behind:
Besides we finde in stories worth the reading,
A certaine Romane Emperour was so kind,
Claudius by name, he made a Proclamation,
A Scape to be no lasse of reputation.
Great suppers do the stomacke much offend,
Sup light if quiet you to sleepe intend.
To keepe good dyet, you should neuer feed
Vntill you finde your stomacke cleane and void
Of former eaten meate, for they do breed
Repletion, and will cause you soone be cloid,
None other rule but appetite should need,
When from your mouth a moysture cleare doth
void.

All Peares and Apples, Peaches, Milke and Cheese,
Salt meates, red Deere, Hare, Beeffe and Goat:
all these

Are meates that breed ill bloud, and Melancholy,
If sickle you be, to feede on them were folly.
Egges newly laid, are nutritiue to eate,
And roasted Reare are easie to digest.
Fresh Gascoigne wine is good to drinke with meat,
Broth strengthens nature aboue all the rest.
But broth prepar'd with floure of finest wheat,
Well boild, and full of fat for such are best.
The Priests rule is (a Priest rule should be true)
Those Egges are best, are long, and white and new.
Remember eating new laid Egges and soft,
For euery Egge you eate you drinke as oft."

* * *

The school of Salerno became so famous that Frederick II of Sicily decreed that no one should practice medicine in his kingdom who had not passed the examinations given by this institution. To meet the requirements the candidate had to prove that he was legitimate; he must have attained the age of twenty-one years and have studied medicine for at least seven years. The examination tested his familiarity with the works of Hippocrates, Galen, Avisenna and Aristotle. If he passed the examination satisfactorily he was awarded the master's degree. The term "Doctor" was reserved for the professor of medicine.

The founder of modern surgery is said to have been Roger of Parma, a graduate of Salerno. In 1180 he wrote his *Chirurgia*,

*The complete text in Latin and in English is conveniently found in *The School of Salernum* by Harington. Paul B. Hoeber, Inc., Publisher.

the first work on surgery. In addition to the course prescribed in medicine the candidate for surgery was required to study anatomy for a year. Roger employed ligatures if cauterization failed to check hemorrhage. He used sutures, employed setons for counter-irritation. He broke bones in order to obtain good results from badly united fractures. Roger was followed by Roland of Parma, who was not more than a disciple. Salerno was the first independent medical school of the time following that long dreary period of inertia—the Dark Ages. To quote Garrison, "Its anatomy was based upon that of swine, its physiology and pathology were Galenic, its diagnosis mainly pulse and urine lore, but diseases were studied first hand, in a straightforward, spontaneous, engaging manner; therapy was rational, with an effective scheme of dietetics; Salernitan surgery was new and original; obstetrics and nursing were cultivated by talented women." Sudhoff expresses the same opinion, namely the teachers of untold generations and Salernitan graduates did not delve so deeply into book lore so much as practical knowledge, openmindedness and personal experience at the sick bed. Salernitan masters, according to Neuburger, were the first medieval physicians to cultivate medicine as an independent branch of science.

Interesting are the following scraps of advice attributed to Salernitan practitioners:

"When called to a patient commend yourself to God and to the Angel who guided Tobias. On the way learn as much as possible from the messenger, so that if you discover nothing from the patient's pulse or water, you may still astonish him and gain his confidence by your knowledge of the case. On arriving ask the friends whether the patient has confessed, for if you bid him do so after the examination it will frighten him. Then sit down, take a drink, and praise the beauty of the country and the house, if they deserve it; or extol the liberality of the family.

"Next proceed to feel his pulse, remembering that it may be affected by your arrival, or, the patient being a miser, by his thinking of his fee. Do not be in a hurry to give an opinion for the friends will be more grateful for your judgment if they have to wait for it. Tell the patient you will cure him, with God's help, but inform his friends that the case is a most serious one.

"Look not desirously on the man's wife, daughter or handmaid for this blinds the eyes of the physician, deprives him of the divine assistance and disturbs the patient's mind."*

It must be remembered that the thirteenth century witnessed the beginning of the Ren-

aissance movement which was to transform European life and thought. With the progress of the Renaissance the School of Salerno began to decline as the torch of knowledge was carried to other institutions, to Padua, Montpellier and Paris. The University of Naples gradually obscured its sister school, which was finally abolished in 1811 by decree of Napoleon. Not a trace of the School of Salernum was to be found by Daremberg, who visited Salerno in 1848, at which date the medieval institution of learning appeared to be absolutely unknown to the inhabitants.

A SURGEON OF DISTINCTION

(The Nation)

The late Dr. William W. Keen had a rare personality and tremendous ability. Hence he was bound to make his way in any walk of life. His was an open mind toward new developments in his own profession, which is a rare attribute in any profession—especially among the medicos, we should be tempted to say, if we did not know so many editors. A distinguished surgeon, Dr. Keen will perhaps be best remembered for his operation for sarcoma of the jaw on President Cleveland on July 1, 1893, on Mr. E. C. Benedict's yacht *Oneida* as it steamed through Hell Gate. This was so concealed that, incredible as it seems, not a reporter suspected, and nothing leaked out about it for twenty-four years, when Dr. Keen published the details. But Dr. Keen deserves far greater fame for his distinguished teaching in three colleges, his early championship, against tremendous opposition, of antiseptic surgery in this country after the Lister discoveries, and his own important labors in insisting upon the use of paratyphoid inoculation in our armies. In addition to this he wielded an admirable pen which interested laymen as well as the medical profession. His ninety-five years, full of genuine service to humanity, are remarkable in themselves and because they more than span the triumphant rise of modern surgery.

A SUGGESTION FOR CONGRESS

(Kalens)

The Congress has tried for weeks to balance the budget. The job could have been done by any six men of average intelligence in thirty minutes. Two legislative acts would have accomplished it, neither requiring long explanation or debate: (1) The legalization of 2¾ per cent beer. This beverage is not intoxicating. An appropriate tax would yield some four or five hundred million. (2) The lopping-off of the provision of medical care for men who wore the uniform but never saw action, whose disabilities post-date the war, and for their families. This would save nearly half a billion.

THAE YOUNG DOCTORS

Sandy, hae ye seen how prood an' conceited like a lot o' thae young chaps in medicine are? They're a' th' time shawin' their importance.

Ye see, wi' their two years an' mair in college, an' anither ane or twa in some hospital, they think they hae far mair knowledge than any o' us auld fellows.

Just think o' a' the new remedies they are sae fond o' tellin' about. There's that ane they ca' Amylamymethylesterethylhydroaldehyde o' sodæ,—

*From *De Adventu Medici* (The Doctor's Visit) Translated by Dr. E. T. Withington.

A' weel, when they get a' thae things thegither in ane dish, they canna tell what they hae, especially we amy (aimee) in it, but onywa' we used to ca' it saleratus for short. It was cheaper tae ca' it that.

Aye, an' think o' a' the new diseases thae chaps are finding oot aboot. Ye mind we were satisfied we' bilious fever, malaria, pneumonia an' the common cauld, but noo these baby doctors o' medicine are av' speerin' us about the ane they ca' agranulocytosis angina. They thocht we couldna pronoonce it. Weel, maybe we canna sae it right, but we can sing it. Aye, we can sing it tae the tune o' auld hundred. Let's show them. Noo a'thegither. Sing.

Should auld acquaintance be forgot,
An' never brocht tae min',
Agranulocitotica,
Is nae sae bad a line.

Praise God frae whom a' blessin's flow,
A gran u lo cy to ti co
Is a' the bunk an' fun tae us,
Noo, let the bairn medics cuss.

—WEELUM.

MEDICAL ECONOMICS

MEDICINE TODAY AND TOMORROW

The following is a signed editorial which appeared in the Annals of Internal Medicine for March, 1932. The writer is Dr. Burton R. Corbus, Chairman of the Executive Committee of the Michigan State Medical Society. Those members of the Michigan State Medical Society who are Fellows of the American College of Physicians have doubtless read it in the Annals. There are many, however, who do not come under this category, for which reason we reprint it under the above heading.—Ed.

Old General Depression lays his hand heavily on our profession and the average doctor somewhat suddenly awakens to the fact that all is not well and that "something must be done about it."

For some time he has sensed forces at work which, in their operations, were detrimental to him. In a more or less academic way he has read, in lay magazines, articles which indicated an unrest on the part of the public, criticisms of the doctor, the hospitals, protests against the cost of medical care. In professional magazines he has read articles by those who are looked upon as leaders of his profession, expressing a concern about the situation, but except where encroachment here and there has hit his income directly, he has gone on his busy way unconcerned, or at least not sufficiently concerned to do more than scold about an irritating situation.

Certainly he has not been truly conscious of the strong social movement which is now in the air. In his address to the College of Surgeons, Dr. Angell speaks of the new philosophy "which conceives the social order as under binding obligation to give its members wholesome conditions of life . . . which conceives human life as indisputably superior to money or physical property in any form." We must listen attentively to his conclusions, that "in the long run, by hook or by crook, society will demand competent medical and nursing service, adequate in amount to meet the needs of everyone. If it cannot secure these as the result of measures voluntarily devised and perfected by the profession and its interested friends, it will look to other agencies, and

notably to the Government, to produce the desired results."

The entire world is in a state of flux. In finance, in religion, in constitutional law, as well as in medicine, we seem to be in an irresistible stream, the course of which is uncharted and the end not in sight. It is a period of maladjustment, and a period in which maladjustments long existent are being emphasized. Re-adjustments become a necessity and with these re-adjustments comes the opportunity for the correction of maladjustments, many of them of long standing and of very gradual growth.

It is a time for those who, by reason of official position or by reason of unusual ability, are the leaders of our profession to put their minds together and help us to chart our course. It is not the time for reactionary impulsive action, impractical experiments, or challenging attitudes. We must be on guard against impractical panaceas which come either from within or from without the profession, and hope that no such panaceas will obtain legislative approval.

It is not unlikely that there is to be a distinct change in the character and type of medical practice in the next generation. A variety of social movements affecting medicine are under way, and their development is not to be stopped. State medicine is edging its way in and is not to be entirely kept out. That concessions must be made, compromises accepted, must be recognized by the rank and file of the profession. It will be the obligation of our leaders to guide, so far as they may, these movements, and to advise us when such concessions are necessary and compromises essential.

The action of the California Medical Society with its proposed public relations office with paid secretary and corps of assistants, and the Michigan plan for a survey of medical activities within the state, indicate that medicine is not unmindful of its obligations.

If state medicine is not to come, if institutional practice is not to be more common than it is now, if charitable clinics and governmental medical agencies are not to continue their progressing encroachments, then the rank and file must not be content with this shifting of responsibility to their leaders, but must do their part as individuals. Open warfare against all clinics, good and bad, and social movements of various sorts whose objective is the care of the sick, will not only be futile, but is certain to be detrimental to the entire professional body. Charitable clinics, however much they permit abuses, however much they may impinge on the individual's practice, have a legitimate objective and were started with the best of intentions. Over-enthusiasm, sincere enough, and over-ambition on the part of a paid secretary, are usually responsible for the over-activity and the associated abuses. The individual doctor may do much through personal contact with his acquaintances and patients who are members of lay boards. Properly approached they cannot fail to recognize that the doctor has an interest at least equal to their own in community welfare. It might be well to remind them that these clinics are dependent on the doctor for their very existence, and that the public is today asking the doctor to carry a disproportionate philanthropic load as compared with other individuals in the community.

The obligation rests upon medicine: first, to do its part in making the doctor more competent to fulfill his obligation to his patient and to the community, and second, to direct educational presentations to the public, to the end that the public shall more properly evaluate the doctor's services, and realize the extent of its dependence upon him for good health and happiness. We must have our finger

in the pie. Through our representatives we must be in a position to guide where we may this evolutionary process. Society and the profession will equally benefit if this evolution proceeds sanely and along such lines as will permit the medical profession to maintain its ideals and continue to endow mankind with discoveries, and with the application of discoveries, such as have, in the past, brought so much of health and happiness into the world. The way must be found for these things to be maintained, with the doctor leading a truly independent life, assured of sufficient income to make it possible for him to give the best that medicine has to offer to his patients, and to make life for him reasonably happy and satisfactory. The way will come if the profession will only maintain a unified front. We have ever shown a lack of real cohesiveness. Individualists by training and temperament, we have never been willing to play the game as a group. As this new social order comes into being, adjustments will be difficult, and some sacrifices will be necessary and imperative. This must be recognized and accepted.

COMMUNICATIONS

June 16, 1932.

Secretary,
Michigan State Medical Society,
Dear Doctor Warnshuis:

At a recent Board meeting a resolution was adopted recommending the publishing of the enclosed correspondence regarding "short time" licenses in the state, regarding which there seems to be considerable misinformation among the medical profession at large.

Yours very truly,
NELSON McLAUGHLIN, Secretary.
Petoskey, Michigan,

June 2, 1932.

Dr. J. E. McIntyre,
Lansing, Michigan.
My Dear Doctor:

This is the time of the year when the State Board of Registration of Medicine is deluged with requests for short time licenses to practice in the resort districts of Michigan.

You live in a resort region and know what it means to have men from outside the state come in for two months in the summer and skim the cream of this resort business.

As a personal favor to me I wish you would take time to write to the secretary of the State Board, protesting against short time licenses in the resort district of Michigan. If we all get together on this matter I am sure we can persuade the State Board to see things in our light. I am also bringing the matter to the notice of the Northern Michigan Medical Society and I am sure that they will protest the short time license and will request the State Board not to issue such licenses.

Thanking you very much for the attention you may give this matter, I remain,

Very truly yours,
(Signed) B. H. VAN LEUVEN, M.D.,
Councilor, 13th District.

June 2, 1932.

Secretary, State Board of Registration in Medicine,
Lansing, Michigan.
My Dear Sir:

I wish to call your attention to the fact that this is the season of the year in which your department

is deluged with requests to practice medicine in Michigan during the resort season.

On behalf of myself as Councilor of Northern Michigan and on behalf of the Northern Michigan Medical Society I wish to protest to your honorable body the further licensing of men from outside of the state to practice medicine in our resort territory during the summer season. These men come in here and pose as specialists and what not and make their summer expenses out of the resort region. This is obviously unfair to the men who live in these districts and support the county and state medical societies. It would be very gratifying to me and the Northern Michigan Medical Society if your board would refuse to license men who are obviously only going to practice here in the summer. There is absolutely no objection to issuing licenses to men who intend to locate here permanently and practice the year around.

Again asking your kind consideration of this matter, I remain,

Very truly yours,
(Signed) B. H. VAN LEUVEN, M.D.,
Councilor, 13th District.

June 16, 1932.

Dr. B. H. Van Leuven,
Petoskey, Michigan.
Dear Doctor Van Leuven:

We have your communication of June third, also one of the same date addressed to Dr. J. Earl McIntyre, President of this Board.

First, I want to call to your attention the fact that there are no "short time" licenses issued in Michigan: qualified practitioners are entitled to registration, but this is a permanent registration, neither "temporary" nor "short time" licenses being possible under our Medical Practice Act.

Second, contrary to general opinion we receive very few applications from physicians who wish to practice in the summer resorts of the state. Looking over our files for the past six months I find only three inquiries from men who state that they have summer homes in Michigan and wish to practice while in residence here. Each of these applicants was advised that their licensure was a Board matter and could be considered at any of the regular business meetings of the Board of Registration in Medicine. To date none of these three physicians has filed a formal application for consideration and, therefore, these requests cannot be considered as bona fide applications for licensure.

It rather appears to me that the persons complained of are either unregistered practitioners, or must have obtained registration years ago and are now able to seek more comfortable surroundings during the summer months. In the latter case there is little that can be done; I doubt very much that you could legally restrict the practice, as regards location, of a properly qualified, registered physician. In the former case, a complaint (properly substantiated by facts) to the local prosecuting attorney should bring the relief sought.

If you will advise the names of any persons practicing in your locality whose registration is in doubt, we shall immediately notify you of their status with this Board.

Yours very truly,
NELSON McLAUGHLIN, Secretary.

P. S. I hope you will not hesitate to supply us with the names of, and any other information you may have regarding persons whom you may suspect are practicing illegally in any of the resort sections, as such communication will be considered confidential insofar as the person reporting them is concerned.

July 5, 1932.

To the Entire Staff of Blodgett Memorial Hospital:

In line with present-day conditions and in an effort to reduce the cost of medical care for the individual patient without depriving him of any service necessary to his welfare, we have instituted a multiple nursing service at Blodgett Memorial Hospital. Patients cared for on this service will receive approximately one-half of the time of a graduate nurse and will in consequence pay one-half of the normal fee. The charge for two patients, for example, would be: \$3.00 per day for 12 hour service for each patient and each patient would be charged 50c per day for nurses' board. We have arranged to utilize any free time of these nurses for floor service so that it is not necessary for you to have more than one patient who desires this service before requesting this care. Twenty-four hour service on multiple nursing would be rendered by a day nurse and a night nurse with a cost to the patient of \$7.00 per day, including the nurses' board.

We have selected competent nurses for this service and we recommend it particularly for those patients for whom you wish a somewhat more detailed service than the floor nurses are able to provide, although your patient does not require the full time of a graduate nurse. Requests for this service should be made to the Nursing Office.

Very truly yours,
D. M. MORRILL, M.D., *Director.*

GENERAL NEWS AND ANNOUNCEMENTS

Dr. J. G. Huizinga has removed from Grand Rapids to Holland.

Dr. R. Earle Smith, Grand Rapids, has moved his offices to the Ashton Building.

The dates for the next A. M. A. meeting are June 12 to 16, 1933, in Milwaukee.

Dr. E. H. Nesbitt, Grand Rapids, has been appointed Director of City Welfare by the City Manager. Dr. Nesbitt will continue his duties as Superintendent of the City Tuberculosis Hospital.

Drs. Ferris Smith, H. S. Collisi and F. C. Warnshuis have been appointed as Police and Fire Surgeons in Grand Rapids.

Dr. J. Van Becelaere of San Diego, California, was a visitor in Detroit recently. Dr. Van Becelaere is an old Detroit physician. A few years ago he settled in California. He is now Assistant Editor of the Western Medical Times, the office of publication of which is Denver, Colorado.

The American Roentgen Ray Society will hold its Thirty-third Annual Meeting at the Book-Cadillac Hotel in Detroit, September 27, 28, 29 and 30.

OBITUARY

DR. NEAL L. HOSKINS

Dr. Neal Hoskins of Detroit died at his home, 135 Monterey avenue, on July 21, after about a year's illness of cancer of the sigmoid. He was born in Lisbon, N. H., in 1878. After attending schools of his native town he spent four years in Dartmouth College, graduating with the degree of B.A. He entered the University of Michigan in 1901 but completed his medical work and took his degree of M.D. at the Detroit College of Medicine in 1905. Following his graduation he was an interne at Harper Hospital for one year; then followed a year of post-graduate studies abroad, chiefly at Berlin, Germany. In 1908 he became associated with Doctors Angus McLean, Don M. Campbell and Andrew P. Biddle in an office on Fort street, West, Detroit.

Dr. Hoskins was a member of the staff of St. Mary's Hospital until the time of his illness, his specialty being internal medicine, and for a number of years professor of medicine at the Detroit College of Medicine and Surgery. In his teaching he was particularly successful. He had a large and seasoned clinical experience and had that peculiarly happy faculty of impressing his students so that there was seldom an absentee during his lecture period. As a bedside clinician he was always cheerful and hopeful. While excelled by few as diagnostician, Dr. Hoskins felt that one of a physician's first duties was to make his patient comfortable in mind and body, and as a result he had a large and loyal practice. He was the first house physician of the old Ponchartrain Hotel, Detroit. Here he met and ministered to a variety of people. He was particularly popular with persons associated with the circus and with the theatres and symphony orchestra, who were appreciative of his efforts to serve. To follow the circus for a month each year was an avocation to which he looked forward with keen anticipation. He was a member of the Scarab Club. During the autumn weeks he was accustomed to seek his native hills of New England where he spent many hours with his brush. Dr. Hoskins was a landscape artist of very high merit. He worked hard and played hard. He was a true and loyal associate and a valued consultant. He was a member of the Wayne County and Michigan State Medical Societies and the American Medical Association. He leaves his wife, who was Miss Emily Streube of Sandusky, Ohio, and one brother, Carl S. Hoskins of Lisbon, N. H. The remains were taken to his old home for interment.

DR. JAMES E. BURGESS

Dr. James E. Burgess of Detroit died at his summer home near Pontiac only July 6 of a heart attack. A month ago he suffered three broken ribs and collar bone in an automobile accident and had been in poor health since that time. Dr. Burgess was Coroner of Wayne County for twenty years. He was born in Drumbo, Ontario, in 1866. He was graduated from Woodstock College and in 1893 received his medical degree from the Michigan College of Medicine and Surgery. In 1889 he married Gladys M. French of Wolverton, Ontario. She and one son survive. Dr. Burgess was a member of the Wayne County and Michigan State Medical Societies.

SOCIETY ACTIVITY

UPPER PENINSULA MEDICAL SOCIETY, SAULT STE, MARIE

Thursday, August 11th

10:00 A. M.

Welcome by Mayor Andrew J. Short
Response—Dr. Manthei, President of U. P. Society

Dr. Waldie—Tuberculosis, Symptomatology vs. Pathology

Dr. Twohy—Collapse Therapy in Tuberculosis

Dr. Alexander of Iron Mountain—Phrenectomy

Discussion by Dr. Leslie of Howell, Mich.

1:30 P. M.

Office Caутery—treatment of Endocervicitis—Dr. Maloney of Ironwood

2:00 P. M.—Thyroid Surgery—Dr. Shawn, Detroit

3:00 P. M.

Fractures—Dr. Lafferty, Detroit

4:00 P. M.

New phases in Gynecology—Dr. Gardner, Chicago

Friday A. M.

Dr. Angus McLean

Dr. Louis Hirschman

Dr. J. Milton Robb

Ladies—

Luncheons 11th and 12th

Cars for sightseeing

Bridge

Golf—

U. P. Medical Championship under wing of Dr. F. C. Bandy

COMMENTS

Your patronage of our advertisers is urged. Advertisers rightly expect your business and without it they naturally will terminate their advertisements. The Journal requires this financial income to continue publication. Respond to the advertisements in this issue.

Contact your local candidates for election to public office. Inform them as to the problems of medical legislation and obtain a statement as to their attitude.

Public Relation Committees of County Societies are urged to expedite sending in the reports requested from them. It is desired to complete our State Survey as promptly as possible. Members should return questionnaires promptly.

The September issue will contain the completed program for our annual meeting in Kalamazoo,

Sept. 13-15. No member can well forego attendance. A list of local hotels is imparted in this issue. Write for your reservations and do not be deterred from attending. It will be to your personal interests to be present.

The service of the Secreatry's office is at your disposal. Your inquiries and requests will be given prompt attention. Your correspondence is invited.

Beware of collection agencies. Do not fall for their representations. Do not sign a contract unless you fully understand its terms.

By reason of experience the warning is again given to always protect yourself by means of several X-rays and consultants when attending fracture cases. Keep an accurate case record. In all serious illnesses and undetermined diagnoses request consultation. This is a day in which suits are started upon the most trivial claims.

AUGUST DAYS

Depressions have no effect upon passing days—they slip by as rapidly as they did in 1929 or 1829. The "note due day" is upon us seemingly ere our signature has dried. December and January will be upon us before we are aware. That is why we should utilize these lean August days to put our house in order for winter's cold and needs.

Get out the old ledger—even if it does make you cuss at some unappreciative patient—make out a statement for every account, place them in a bill-fold and in your pocket. Then call on those who owe you and present them with two opportunities: to pay you in full or to arrange a plan of payment.

In a plan of deferred regular payments, first secure a note for the amount due you—a regular note form or use the form we submit below. Securing a note is securing an acknowledgment of indebtedness and will be accepted in court without further evidence. With the note secured then obtain an agreement as to when and how payments are to be made.

Thus fortified you have more collectible assets than those recorded in your ledger. Secondly, your banker will accept these notes as collateral, may even advance you funds and will act as your collecting agent. Lastly these notes will not be outlawed as will your ledger accounts.

We urge that each member utilize leisure August days to square away ledger accounts.

\$....., 19.....
.....after date for value received.....promise to
Pay to the order of.....
..... Dollars
at with interest
at per cent per annum after.....until paid.
And to secure the payment of said amount.....
hereby authorize, irrevocably, any attorney of any
Court of Record to appear forin such Court,
in term time or vacation, at any time after maturity,
and confess a Judgment without process, in favor
of the holder of this Note, for such amount as may
appear to be unpaid thereon, together with costs and
.....dollars attorney's fees, and to waive
and release all errors which may intervene in any
such proceedings, and consent to immediate execu-
tion upon such judgment, hereby ratifying and con-
firming all that.....said attorney may do
by virtue hereof.

No.....Due.....

RESOLUTIONS

The Michigan State Nurses Association, at its Annual Meeting convening at Saginaw, May 5, 6, and 7, 1932, presents the following resolutions.

BE IT RESOLVED that the Michigan State Nurses Association congratulates the committee on a varied, timely, and interesting program; appreciates the cordial hospitality extended to it by the nurses of the Saginaw District; thanks our Saginaw friends who have so graciously contributed to our entertainment; and recognizes the very satisfactory publicity given the convention by the Saginaw Daily News.

WHEREAS it is evident that the number of graduate nurses far exceeds the demand,

BE IT RESOLVED that every effort be made to decrease the number of student nurses and to improve the quality of those accepted by greater attention to the educational qualifications, personality, health, and social background of those selected.

WHEREAS changing conditions demand a more definite preparation of the nurse for community service,

BE IT RESOLVED that schools of nursing correlate their theoretical and practical instruction to provide training suitable to meet the needs.

WHEREAS unemployment is especially marked among the private duty group,

BE IT RESOLVED that active coöperation and intelligent effort be given toward making the distribution of nursing service conform to community needs.

WHEREAS economic conditions are concentrating attention on the appraisal of all welfare activities,

BE IT RESOLVED that at this time the public health is in special need of conservation, and curtailment of public health activities is not economically sound.

WHEREAS all groups are bending every effort toward ameliorating suffering and want,

BE IT RESOLVED that nurses contribute interest and assistance to community welfare projects.

WHEREAS thoughtful consideration is being given to the ever-increasing cost of medical care,

BE IT RESOLVED that the Michigan State Nurses' Association coöperate with the Michigan Hospital Association, the Michigan State Medical Society, the Michigan State Dental Society, and the Michigan Education Association, in attempting to solve the common problems involved in our service to the public.

Respectfully submitted,

ELIZABETH WESTENDORF

MARIAN DURELL

WILKIE HUGHES

EMILIE SARGENT

ELIZABETH P. ROBINSON, *Chairman*

AMEBIC GRANULOMAS OF LARGE BOWEL: CLINICAL RESEMBLANCE TO CARCINOMA

Herbert Gunn and Nelson J. Howard, San Francisco, report three cases of amebic granuloma of the large bowel. They assert that the pathologic process consists in persistence of an isolated chronic ulcer with progressive erosion of the wall of the bowel. In response to the amebic ulceration and secondary infection, large amounts of edematous fibrous granulation tissue appear. This process affects the entire bowel wall and the neighboring mesocolic fat. As a consequence, tumor masses are formed. These granulomas may be easily mistaken for carcinoma, for they give symptoms, physical signs and radiologic appearances that may be identical with those produced by carcinoma. *Endameba histolytica* is world-wide in its distribution, and infections with it do not necessarily produce diarrhea or dysentery.—*Journal A. M. A.*

COUNTY SOCIETIES

ANTRIM, CHARLEVOIX, EMMET, CHEBOYGAN COUNTIES

Minutes of July Meeting

The July meeting of the Northern Michigan Medical Society was held at the Perry Hotel, Petoskey, Thursday, July 14, with an attendance of nineteen members and two guests. After partaking of a chicken dinner the meeting was called to order by the President. Minutes of last meeting were read and approved. Report of Public Relations Committee was heard.

The following motions were made and carried: (1) That the fee bill as presented by the Cheboygan Poor Committee for the care of the indigent of that county be accepted by the doctors of that county temporarily. (2) That the fee bill and plan made by our Public Relations Committee be submitted to the Boards of Supervisors of the various counties and their opinion obtained and some agreement be worked out with them.

The business of the evening was then laid aside and the program taken up. This consisted of a number of talking pictures showing the anatomy of the female pelvis and related structures. This was followed by several reels showing the various operations on the female organs. The series was very interesting and well enjoyed by the members. It was given by the Petrolagar Laboratories through their representative, Mr. Ricketts.

Dr. Christie of Cheboygan was appointed to the Program Committee for the month of August. Meeting adjourned.

GRATIOT-ISABELLA-CLARE COUNTY

The May meeting of the Gratiot-Isabella-Clare County Medical Society was held in the Wright Hotel, Alma, Thursday, May 26th. Eleven members and three visitors had dinner together. Two members came in after dinner.

President Burt called the meeting to order. The minutes of the previous meeting were read and approved. Motion was made and carried that we do not hold a meeting in July and August. Some communications were read.

President Burt then introduced Doctor O. W. Lohr from Saginaw, who gave a demonstration of how photography can be used to show pathological specimens both in the gross and microscopical pathology. The Doctor showed pictures of nearly every part of the human body that had been either injured or diseased.

Dr. T. J. Carney discussed and complemented Doctor Lohr's presentation.

On behalf of the Society President Burt thanked Doctor Lohr for his kindness in bringing this interesting demonstration to our Society.

Meeting adjourned.

The June meeting of the Gratiot-Isabella-Clare County Medical Society was held in the Wright Hotel, Alma, Thursday, June 16th. Fourteen members and twenty-one visitors had dinner together.

Vice President Carney called the meeting to order. The minutes of the previous meeting were read and approved.

Doctor Carney then introduced Doctor Norman F. Miller, Professor of Obstetrics and Gynecology at the University of Michigan, who talked on "Le-

sions of the Cervix and Their Treatment." The doctor first described the different lesions in detail, then showed some lantern pictures to illustrate the most essential points in the treatment, then taking up the Medical and Surgical Treatment of the different lesions. The Doctor's talk was discussed by Doctors Hart, Hobbs, Toshack and others.

On behalf of the Society Doctor Carney thanked Doctor Miller for his kindness in bringing this interesting discussion to our Society.

Meeting adjourned.

E. M. HIGHFIELD, M.D., *Secretary*.

WAYNE COUNTY

The Blackwell Society, an organization composed of the women physicians of Detroit, Michigan, has presented to the Wayne County Medical Society of Detroit a large American flag which hung in front of the Society's new headquarters, 4421 Woodward at Canfield, for the first time on Independence Day. The flag measures ten by fifteen feet and is made of unbleachable wool.

The Program Committee is working on the new program for the 1932-33 season of the Wayne County Medical Society. The Tuesday evening programs will again be resumed in October. Members of the Michigan State Medical Society are cordially invited to attend these meetings when visiting Detroit.

The WWJ broadcasts of the Wayne County Medical Society are given every Tuesday evening from 5:45 to 6:00 o'clock.

The Seniors Club of the Wayne County Medical Society has accepted the golf challenge of the Noon Day Study Club and will hold their tournament at Meadowbrook Country Club on August 3.

The Noon Day Study Club held their First Annual Golf Tournament at Tam o' Shanter Golf Club on June 15. Forty-three members and guests were present and enjoyed eighteen holes followed by dinner and presentation of prizes. Dr. A. P. Wilkinson was winner of low gross with an 86. Dr. E. A. Bicknell was runner up with a 90. Dr. A. E. Schiller won third low gross with a 90.

The Cafe of the Wayne County Medical Society has inaugurated a new menu which is enjoying great popularity among the doctors of Wayne County. The new policy emphasizes food at lower prices and offers an array of hot-weather combinations that "click" in taste and economy. When you are visiting in Detroit, why not drop into the cafe among home-like surroundings with your Wayne County friends?

The Periodic Health Examination Committee of the Wayne County Medical Society has prepared an examination blank which has been printed and is now on sale in the Executive Office. These special blanks sell for \$1.00 the pad of 100, 500 for \$4.00, or 1,000 sheets for \$7.00. Members of the Michigan State Medical Society may write the Executive Office 4421 Woodward Ave., Detroit, enclosing check, and blanks will be mailed immediately.

WOMAN'S AUXILIARY, MICHIGAN STATE MEDICAL SOCIETY

MRS. J. EARL MCINTYRE, *President*, Lansing
MRS. W. E. McNAMARA, *Secretary*, Lansing

TO COUNTY PRESIDENTS

The Sixth Annual Convention of the Michigan State Medical Society Woman's Auxiliary will be held at Kalamazoo, September 13, 14 and 15, 1932.

According to the Constitution, "Each County shall be entitled to be represented at the meetings of the organization by any members in good standing. Each Auxiliary shall be entitled to one delegate for each twenty-five members or major fraction thereof, who shall constitute the voting poll of the session."

"Written annual reports shall be made by all committees."

"A regular meeting of the board shall be held immediately before each annual meeting of the organization."

At 10:00 A. M. Wednesday, September 14, all presidents of Auxiliaries are invited to a Round-table at the Hotel Burdick. We earnestly hope that all Presidents will avail themselves of this opportunity of not only meeting each other, but of discussing problems, interchanging ideas, and informally receiving valuable assistance in their work.

The Executive Board meeting occurs at 12:00 o'clock at the Hotel, and the annual luncheon at 1:00 o'clock at the Kalamazoo Country Club.

Our luncheon guest speaker will be Dr. F. C. Warnshuis, who needs no introduction to our Auxiliary members. We feel that Dr. Warnshuis's talk will be a source of information and enjoyment, and we are particularly fortunate in securing him for our speaker.

Following this occurs the regular annual business meeting, including reports of all standing committees, election of officers, etc.

I am enclosing a blank for your delegate, which must be signed by your President and Secretary, and presented to the credentials committee at Kalamazoo.

Mrs. R. A. Morter, who is General Chairman of the arrangements committee for Kalamazoo, has planned many delightful entertainments for us: a Coöperative Dinner at her home on September 13; a Dinner-Dance at 6:30 on September 14, and drives to various points of interest and a club luncheon on September 15.

Kalamazoo is doing everything to make this a successful convention. I hope we may have a large attendance and endeavor to make this annual meeting better than any preceding one.

PROGRAM

Tuesday, September 13—Coöperative Dinner at the home of Mrs. R. A. Morter, Oakland Drive, with visiting women as guests.

Wednesday, September 14—

10:00 A. M.—Presidents' Conference, Hotel Burdick.

1:00 P. M.—Auxiliary Luncheon, Kalamazoo Country Club, followed by annual business meeting.

Thursday, September 15—

10:00 to 12:00 A. M.—Visit to Parchment Paper Company.

12:30 A. M.—Club Luncheon at Y. W. C. A.

2:00 P. M.—Visit to Upjohn Pharmaceutical Company.

Drives around the city are also planned for members not attending other meetings.

General Arrangements Committee: Chairman, Mrs. R. A. Morter, Mrs. John McGregor, Mrs. William Shackleton, Mrs. R. J. Hubbell, and Mrs. Walter den Bleyker.

OAKLAND COUNTY—PONTIAC, MICHIGAN

President.....Mrs. Robert H. Baker, 57 Cherokee
Vice President.....

Mrs. Palmer E. Sutton, 1138 York, Huntington Woods
Secretary-Treasurer.....Mrs. Hubert M. Heitsch, 549 Perry St.

INGHAM COUNTY—LANSING, MICHIGAN

President.....Mrs. H. S. Bartholomew, 902 W. Michigan Ave.
Vice President.....Mrs. P. C. Strauss, 1518 W. Michigan Ave.
Sec'y-Treas.....Mrs. T. P. Vander Zalm, 112 S. Jenison Ave.

JACKSON COUNTY—JACKSON, MICHIGAN

President.....Mrs. George Seybold
Vice President.....Mrs. Walter Finton
Secretary.....Mrs. Miar McGofflin
Treasurer.....Mrs. Ennis Corley, 1009 Third St.

SAGINAW COUNTY—SAGINAW, MICHIGAN

President.....Mrs. S. A. Sheldon, 2 Holland Court
Secretary.....Mrs. D. H. Swengel, 901 Emerson St.
Treasurer.....Mrs. W. K. Slack, 5 Jefferson Court

BAY CITY COUNTY—BAY CITY, MICHIGAN

President.....Mrs. C. A. Stewart
First Vice President.....Mrs. H. P. Lawrence
Second Vice President.....Mrs. E. A. Wittner
Secretary.....Mrs. Ray Perkins
Treasurer.....Mrs. H. M. Gale, 517 N. Van Buren St.
Corresponding Secretary.....Mrs. Charles M. Swantek

KALAMAZOO—KALAMAZOO, MICHIGAN

President.....Mrs. Walter Den Bleyker, 513 S. Burdick St.
First Vice President.....Mrs. W. O. Jennings, 442 Stuart Ave.
Second Vice President.....Mrs. I. W. Brown, 2335 S. Rose St.
Secretary-Treasurer.....Mrs. Frederick M. Doyle, 1219 Maple St.

CALHOUN COUNTY—BATTLE CREEK

President.....Mrs. R. C. Stone, 120 Garrison Ave.
First Vice President.....Mrs. M. J. Capron, 102 Ann Ave.
Second Vice Pres.....Mrs. Theo. Kolvoord, 137 Frelinghuysen
Secretary.....Mrs. G. W. Brainard, 204 Chestnut
Treasurer.....Mrs. B. G. Holtom, 94 Central

WAYNE COUNTY—DETROIT, MICHIGAN

President.....Mrs. R. E. Loucks, 337 W. Grand Blvd.
Vice President.....Mrs. Claire Straith, 19305 Berkley Road
Recording Sec'y.....Mrs. Zina Bennett, 4909 Buckingham Ave.
Corresponding Sec'y.....Mrs. L. O. Geib, 3860 St. Clair Ave.
Treasurer.....Mrs. William Rieman, 7919 Kercheval Ave.
Custodian.....Mrs. L. T. Henderson, 713 University Place

PATHOLOGY AND TREATMENT OF CORNEAL ULCERS

Oscar B. Nugent, Chicago, prefaces his discussion of the pathology and treatment of corneal ulcers with a brief review of the history of five layers of cornea. The surface corneal epithelium is passes the surface cells of the cornea, less resistance is encountered in the basement epithelial cells. Bowman's membrane becomes thinner and readily quite resistant to germ invasion, but, when infection disappears under the influence of active germ invasion, thus offering little resistance to its progress. The potential lymph spaces of the corneal stroma rapidly fill with inactive or dead leukocytes and fibrous exudate, blocking the progress of repair and inviting further necrosis. Descement's membrane becomes thicker under the influence of inflammation and is most resistant to the process of necrosis. Corneal necrosis is mostly due, either directly or indirectly, to bacterial invasion. Ultraviolet irradiation is made more efficient because of the transparency of the cornea, which offers little resistance to the entrance of the ray. Sterilization of the necrotic and perinecrotic area is most efficiently accomplished by the Birch-Hirschfeld carbon arc lamp, and regeneration of new epithelial cells to cover the area is quite rapid. Scar formation is greatly reduced, and the resulting scar is thinner, as the result of rapid filling with epithelium, which, in a measure, prevents scar formation.—*Journal A. M. A.*

THE DOCTORS' LIBRARY

SURGICAL CLINICS OF NORTH AMERICA. (Issued serially, one number every other month.) Volume 12, No. 3 (Lahey Clinic Number—June, 1932), 299 pages with 123 illustrations. Per clinic year (February, 1932, to December, 1932.) Paper, \$12.00; cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company, 1932.

THE MEDICAL CLINICS OF NORTH AMERICA. (Issued serially, one number every other month.) Volume 15, No. 2. (Chicago Number—November, 1931.) Octavo of 227 pages with 53 illustrations. Per Clinic year (July, 1931, to May, 1932), Paper, \$12.00; Cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company, 1931.

THE SURGICAL CLINICS OF NORTH AMERICA. (Issued serially one number every other month.) Volume 12, No. 1. (Chicago Number—February, 1932.) 240 pages with 92 illustrations. Per Clinic year (February, 1932, to December, 1932), Paper, \$12.00; Cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company, 1932.

MEDICAL CLINICS OF NORTH AMERICA: (Issued serially, one number every other month.) Volume 15, No. 5. (New York Number—March, 1932.) Octavo of 330 pages with 61 illustrations. Per Clinic year (July, 1931, to May, 1932), Paper, \$12.00; Cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company, 1932.

SURGICAL CLINICS OF NORTH AMERICA. (Issued serially one number every other month.) Volume 12, No. 2. (New York Number—April, 1932.) 306 pages with 84 illustrations. Per Clinic year (February, 1932, to December, 1932), Paper, \$12.00; Cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company, 1932.

THE MEDICAL CLINICS OF NORTH AMERICA. (Issued serially, one number every other month.) Volume 15, No. 6. (Mayo Clinic Number—May, 1932.) INDEX NUMBER. Octavo of 239 pages with 31 illustrations. Per Clinic year (July, 1931, to May, 1932), Paper, \$12.00; Cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company, 1932.

MANUAL OF CLINICAL AND LABORATORY TECHNIC. By Hiram B. Weiss, A.B., M.D., F.A.C.P., Associate Professor of Medicine, College of Medicine, University of Cincinnati, Cincinnati, Ohio; and Raphael Isaacs, A.M., M.D., F.A.C.P., Associate Professor of Medicine, Assistant Director of the Thomas Henry Simpson Memorial Institute for Medical Research, University of Michigan, Ann Arbor, Mich. Fourth Edition, Reset. 117 pages, with Diet Table. Philadelphia and London: W. B. Saunders Company, 1932. Cloth, \$1.50 net.

This manual gives a concise outline for a systematic physical and laboratory study of the patient and as such suggests rather than describes procedures. The outline of laboratory examinations is very complete and is accompanied by numerous tables of average normals and a section on the technic of collecting specimens.

THE COLLECTED PAPERS OF THE MAYO CLINIC AND THE MAYO FOUNDATION FOR 1931. Volume XXIII. Edited by Mrs. Maud H. Mellish-Wilson and Richard M. Hewitt, B.A., M.A., M.D. Octavo Volume of 1231 pages with 265 illustrations. Philadelphia and London: W. B. Saunders Company, 1932. Cloth, \$13.00 net.

This annual volume by the members of the Mayo Clinic always contains a collection of papers of value to everyone actively engaged in the practice of medicine and surgery. We have had the privilege of reviewing a number of these during the past five years and can assure the reader that the 1931 number is equal to any of the preceding volumes. The output for 1931 consists of 577 papers, of which ninety-nine are printed in full, thirty-six

abridged and forty-three are abstracted, and 399 by title only. The classification of other years has been followed. The greatest amount of space is given to papers dealing with some aspect of the alimentary tract. A number of papers on general subjects pertaining to medicine and the medical profession are included under the heading "Miscellaneous"; among them are The Status of Radiology, The Obligations of the Medical Profession, Tomorrow's Education and The Influence of Pain and Mortality in Modern Medical Practice. The physician will find many hours of interesting and profitable reading matter.

SIMPLIFIED DIABETIC MANAGEMENT. By J. T. Rearwood, Jr., M.D., Chief of the Diabetic Clinic and Associate Visiting Physician, Presbyterian Hospital, Philadelphia; and Herbert J. Kelly, M.D., Associate in the Diabetic Clinic, Presbyterian Hospital, Philadelphia. J. B. Lippincott Company, Philadelphia, Pa.

The dietetic treatment of diabetic patients will always be of first importance. The methods described in this little book have been tried out in both clinic and private practice. The material has been treated under three heads, namely, the essentials with which every diabetic subject should be thoroughly familiar in order to cooperate with his physician; the second chapter deals with subjects that are for the interest and benefit of the well trained diabetic, which will also be found informative to the physician; the third part takes up the subject of foods and their values with recipes and suggested menus.

A MANUAL OF PHARMACOLOGY. By Torald Sollmann, M.D., Professor of Pharmacology and Materia Medica in the School of Medicine of Western Reserve University, Cleveland, Ohio. Fourth Edition, Thoroughly Revised. Octavo of 1237 pages. Philadelphia and London: W. B. Saunders Company, 1932. Cloth, \$7.50 net.

The object of this work as expressed by the author is to furnish medical students and interested practitioners of medicine an idea of the current conception of drug action from the viewpoint of its practical importance to medicine. In this Fourth Edition the author has confined his efforts to those divisions of pharmacology in which there has been definite advance. This includes the Barbiturates, Bismuth, Cinchophen Toxicosis, Iodine Compounds in roentgenography, liver extract, Mercury Morphine addiction, sexual hormones, temperature regulation, Thallium, vitamins. The work is very complete, embracing the entire subject and its application to therapeutics and to toxicology. The author has included an extensive bibliography which indicates avenues for further study.

NEW AND NON-OFFICIAL REMEDIES, 1932, containing descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on Jan. 1, 1932. Cloth. Price, postpaid, \$1.50. Pp. 492. Ivi. Chicago: American Medical Association.

The recognition of a preparation for inclusion in this book singles it out from the host of new products of the pharmaceutical manufacturers as being a worthwhile addition to the existing armamentarium of the practicing physician. To be thus distinguished it must be shown, under the impartial scrutiny of the carefully chosen group which is the Council on Pharmacy and Chemistry, that it has acceptable evidence of therapeutic usefulness and that it is marketed in accordance with the honesty and straightforwardness envisaged by the excellent Rules which have been the outgrowth of the Council's quarter century experience in appraising the merits of new drugs.

In accordance with its custom of keeping the an-

nual editions of New and Non-official Remedies in the forefront of current medical thought, the Council offers in this volume the newly revised articles: Barbitol and Barbitol Compounds; Fibrin Ferments and Thromboplastic Substances; Liver and Stomach Preparations; Mercury and Mercury Compounds; and Ovary. Perhaps the most noteworthy new preparations admitted are: nupercaine-Ciba, a local anesthetic; pentobarbital sodium, a barbituric acid derivative; and iopax, a new preparation for roentgenologic use. All of the ovary preparations formerly described are omitted and none of the new standardized preparations are described, although the names Theelin and Theelol are recognized in the revised general article. Another change of importance is the classification of articles formerly listed as "Exempted" under the heading "Accepted but Not Described." There is the usual excellent index and the augmented Index to Proprieties Not Included in N. N. R.

PHYSIOLOGY OF BACTERIA. By Otto Rahn, Professor of Bacteriology, Cornell University, 438 pp., 42 illus. P. Blakiston's Son & Co., Philadelphia, 1932. \$6.00.

In this work on physiology, the bacteria are considered not as causative agents in disease but as subjects from which broad biological principles may be derived. The functional relationships of these forms are discerned in three ways, through analyses of the products of bacterial metabolism, by studies of growth of cultures under various conditions and by investigations on bacterial death. These topics form the subject matter of the book. Summaries of fact and theory following the various topics and the author's general clarity in dealing with more or less technical subjects make the book of value to others than the technical bacteriologist.

RECENT ADVANCES IN PATHOLOGY. By Geoffrey Hadfield, M.D., F.R.C.P. London, Professor of Pathology in the University of London, and Lawrence P. Garrod, M.A., M.B., M.R.C.P., London, Bacteriologist and Lecturer in Bacteriology, Late Demonstrator of Pathology, St. Bartholomew's Hospital; 67 illustrations. Price, \$3.50; Philadelphia, P. Blakiston's Son and Company, Inc.

This book of nearly four hundred pages, as the title indicates, is concerned with the latest advances in knowledge of specific diseases rather than the more abstract problems that underlie them. The authors in their selection of subjects have been guided by the importance from a clinical point of view, so that we have considerable space devoted to the pathology of respiration diseases, to Bright's disease, to the cardiovascular system, to diseases of the central nervous system and to the ductless glands. This series of "Recent Advances" (other numbers we have had occasion to review) form valuable supplementary literature to the older and more complete works on the subjects treated.

MATERIA MEDICA, PHARMACOLOGY AND THERAPEUTICS. By Walter A. Bastedo, Ph.G., M.D., Sc.D., F.A.C.P., Assistant Clinical Professor of Medicine, Columbia University; Consulting Physician, St. Luke's Hospital, New York, St. Vincent's Hospital, Staten Island, and the Staten Island Hospital; President, United States Pharmacological Convention, 1930-40. Third Edition, Reset. 739 pages with illustrations. Philadelphia and London: W. B. Saunders Company, 1932. Cloth, \$6.50 net.

Extensive recent research in physics, chemistry, physiology, pharmacology, bacteriology, experimental therapeutics and clinical medicine and surgery have made necessary and almost complete re-writing. New articles have been added on suprarenal cortex, ephedrine, quinine, plasmochin, yatren, ethylene, the barbiturates, pre-anesthetic narcotics, car-

bon dioxide, carbon tetrachloride, the antiseptic dyes. Mercurochrome, metaphen, the mercury diuretics, phenylhydrazine, insulin, ovarian preparations, colloidal lead in cancer, etc. Such are the changes incorporated into this third edition. The subject matter is well arranged and the revisions of the work should make it of greater value to the medical practitioner.

PROPER PLACE OF PHYSICAL THERAPY IN TREATMENT OF FRACTURES

Clay Ray Murray, New York, is convinced that physical therapy, properly used, can be of great value in minimizing residual disability and deformity and in cutting down the period of treatment necessary to secure an end-result; he is equally convinced that, as generally practiced the country wide today in fractures, it frequently accomplishes neither of these objects but results in increased residual disability and prolongs the time needed to secure the end-result. The fault lies in a generalized failure to realize (1) what treatment of fracture is intended to do, (2) what physical therapy can and cannot do and (3) what part the patient plays in the treatment. The fault is shared equally by the physicians and the physical therapists to whom they send the patients. The result is commonly the neglect of physical therapy during that stage of treatment when it is most valuable, and the attempt in the later stages to substitute physical therapy for the patient's part in the treatment. Physical therapy as a method of treatment in fractures can be put on a sound logical basis. One might ignore for the moment the various means of carrying out the treatment and consider what it should do to be of value. How does it fit into the modern conception of treatment of fracture? The ideal treatment of a fracture would embody the immediate anatomic replacement of bone fragments without mental or physical trauma to the patient and the immediate abolition of all pathologic changes in the bone and soft parts without the slightest interference with the usual function of the part or the usual life of the patient. The problem in each fracture is to approach this unattainable ideal as closely as one can. This is accomplished in general by early reductions under anesthesia, by the employment of a minimum of immobilization for as short a time as possible and by allowing and encouraging the active use of the part within pain limits as soon and as often as possible. The value of these principles of treatment is being more widely appreciated constantly. What is not so widely appreciated is the fact that in the part as a whole there exists an extensive pathologic process: torn and thrombosed vascular and lymphatic channels, lacerated tissues infiltrated by hemorrhage, inflammatory exudate with its cellular constituents, and the transudate of edema from circulatory and lymphatic obstruction. More than that, the organization of such infiltration into tissue is rapid. It is measured in hours and days—not in weeks and months. It can be dispersed while it is exudate, hemorrhage and cellular infiltration, and this is the time to attempt to get rid of it, not after it has become organized and can no longer be dispersed. How is it to be removed from the part? There is only one mechanism—circulatory. The problem is to restore the circulatory status of the part to normal as soon after the injury as possible. How is this to be accomplished? 1. The bone lesion should be treated by early reduction under anesthesia, with a minimum of trauma, and by as inextensive an immobilization as possible in apparatus that will allow of the maximum early active use of the part within pain limits. The following of these principles is responsible for the increasing frequency of the use of traction sus-

pension and operative fixation followed by active mobilization. 2. Appropriate physical therapy should be used from the beginning of treatment. This is the much neglected opportunity for optimal benefit from physical therapy.—*Journal A. M. A.*

RADIUM POISONING

JAMES P. LEAKE, Washington, D. C., states that subsequent to the investigations of luminous dial painting, which had been sponsored by manufacturers and others, the Surgeon General of the United States Public Health Service held a conference on the subject, December 20, 1928, as a result of which an investigation was undertaken to determine the remaining hazards, if any existed, and means for prevention. On the basis of the results of this investigation it appears that it should be possible for the industry to be conducted with entire safety. Of the possible sources of ingress of radioactive material (ingestion, skin absorption, and inhalation), massive ingestion by pointing the brush in the mouth has apparently been stopped. There is no evidence of skin absorption or of harmful alpha, beta or gamma radioactivity from sources outside the body. The inhalation of radioactive material as dust or as gaseous emanation is more difficult to control and deserves especial emphasis. The amounts of radium found in the workers are small, relative to those which have previously been noted in serious or fatal cases of radium poisoning, but the fact that this is true in the few workers examined does not give assurance of safety if a large number were employed or if the present exposure continues over a longer period. Even more than in other dust hazards, such as those of silica and lead, in which the effects are slow in appearing, the inhalation of radium dust should be kept below the point of equilibrium between intake and elimination, because great harm may be done before the condition becomes clinically noticeable or detectable by methods which at present can be easily applied. Though there is evidence, in this investigation, of accumulation of radioactive material even under the improved conditions which have obtained since 1926, there is no indication that the accumulation since that date has in any individual case been sufficient to injure the worker. The evidence does, however, show the necessity for a still further and more marked reduction of the exposure, not only barely to prevent further accumulation but also to provide a sufficient factor of safety, under varying conditions and varying susceptibilities.—*Journal A. M. A.*

ACCESSORY SINUS INFECTION IN SUSPECTED PULMONARY TUBERCULOSIS

John D. Osmond, Cleveland, gives the case histories of five patients in whom chronic sinusitis was followed by the appearance of pathologic changes in the lungs. In such cases the clinical symptoms may closely simulate active pulmonary tuberculosis. Râles and elevation of temperature are present. A careful history should prompt a roentgen examination of the sinuses in at least 9 per cent of chest cases examined. Fluoroscopic examination of the chest has very limited differential diagnostic value in determining early tuberculosis and no value in distinguishing early tuberculosis from chronic infection. When a known sinusitis exists, a stereoscopic chest study is indicated to determine the degree of pulmonary changes due to chronic infection. These roentgenograms have immense comparative value for later examinations.—*Journal A. M. A.*